International Civil Aviation Organization
South American Regional Office
Third SAM Workshop/Meeting on ATS Routes Network Optimisation (SAM ATSRO/3) - RLA/06/901
Lima, Peru, 4 to 8 July 2011

SAM ATSRO/3-WP/05
17/06/11

Agenda Item 2: Analysis of Version 1 of the SAM ATS route network

ANALYSIS OF ROUTES PENDING IMPLEMENTATION

(Presented by the Secretariat)

Summary

This working paper presents information on the routes pending implementation and referred for review during Phase 3 of the route network optimisation programme, as well as Version 1 of the SAM route network, for review by the Meeting in light of progress made to date.

References:

- Doc 9426, Air Traffic Services Planning Manual
- ATSRO meeting reports
- SAM/IG meeting reports
- Version 1 of the SAM ATS route network

ICAO Strategic Objectives:	***A - Safety*** ***C – Environmental protection and sustainable development of air transport***

1 Background

1.1 Taking into account the extent of the work to be carried out with regard to the ATS route network, the SAM ATSRO workshop/meetings deemed it advisable for SAM States and IATA to make a thorough analysis of the results of the work carried out at those workshops.

1.2 The two SAM ATS route optimisation workshops that were carried out analysed and agreed on all the modifications requested during the process, and agreed on the terms, paths, boundaries, direction, and all the details required for the introduction of such modifications in regional airspace.

1.3 Likewise, they agreed that SAM/IG meetings would analyse the ATS route network, making maximum use of all available instances. Accordingly, the SAM/IG/6 meeting was presented with a series of routes that should be analysed at regional level.

2 Discussion

2.1 The SAM/IG/6 meeting noted that, using the collaborative decision-making (CDM) concept, IATA had agreed with ANAC of Argentina on a series of ATS routes that would decongest the Argentinian airspace, thus optimising regional flights, giving more flexibility to domestic flights, reducing flight times and fuel consumption, and rationalising the use of non-renewable resources, significantly reducing the emission of contaminating gases (CO_2) into the atmosphere.

2.2 Accordingly, the SAM/IG/6 meeting agreed to include that series of routes in its analysis during the implementation of Version 2 of the route network, to which end it approved its inclusion in an Appendix of that meeting.

2.3 In order to assess the aforementioned routes, they are contained in **Appendices A** and **B** to this working paper.

2.4 Furthermore, the ATSRO/1 meeting, when examining the various preliminary proposals of IATA for the implementation of new routes, noted that some of them did not provide sufficient details to enable a study to determine the feasibility of including them in Version 1 of the route network.

2.5 The analysis of available statistical data also allowed the identification of some routes/city pairs that warranted a more in-depth analysis taking into account the significant air traffic movement involved. Said city pairs are contained in Chapter 9 of the draft Version 1 of the SAM route network. For further reference, the cited document appears in **Appendix C** to this working paper. States and users should analyse this information in light of the progress made to date, and, if applicable, use it as a starting point for Version 2 of the ATS route network.

3. Suggested action

3.1 The Meeting is invited to:

a) take note of the information provided in this working paper;

b) assess the ATS routes presented by IATA and shown in **Appendices A** and **B**; and

c) examine Chapter 9, **Opportunities for improving the SAM ATS Route Network**, of Version 1 of the SAM route network in light of the progress made to date.

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APPENDIX A

The routes to be modified are the following:

1. RNAV MCS DIRECTO ALDOS
2. RNAV TOSOR DIRECTO UMKAL
3. RNAV BIXIM DIRECTO ROPON
4. RNAV ALBAL DIRECTO ASADA
5. RNAV ATOVO DIRECTO TUC
6. RNAV ROSARIO DIRECTO ASISA
7. RNAV KAMUV DIRECTO SNT
8. RNAV LIMAY DIRECTO ASADA
9. UT653 MJZ DIRECTO PAMAL
10. RNAV DIL DIRECTO RGL
11. RNAV DIL DIRECTO CRV

ROUTE	SEGMENT	MODIFICATION	ACTUAL NM	MODIF	SAVING	ACTUAL FUEL	MODIF	SAVING	ACTUAL TIME	MODIF	SAVING	ACTUAL C02	MODIF	SAVING
AEP-IGR	DCT MCS-ALDOS	AEP-IGR DCT MCS LUCIA'!A1	622	616	**6**	4091	4052 KG	**39 KG.**	01:26	01:26	**00:00**	12,9 tn	12,8tn	**0,1 tn**
IGR-AEP	DCT ALDOS - MCS	AEP-IGR DCT MCS LUCIA	600	594	**6**	4263	4232	**31**	01:32	01:32	**00:00**	13.4	13.3	**0.1**
EZE-SCL	DCT TOSOR-UMKAL	EZE-SCL (TOSOR UMKAL)	695	691	**4**	5081	5060	**21**	01:49	01:49	**00:00**	16.5	15.9	**0.6**
AEP-NEU	DCT BIXIM-ROPON + STAR	AEP NQN (DCT BIXIM-ROPON)	587	581	**6**	4354	4324	**30**	01:34	01:32	**00:02**	13.7	13.5	**0.2**
SCL-EZE	DCT ALBAL-ASADA	SCL-EZE	649	647	**2**	4004	3988	**16**	01:28	01:28	**00:00**	12.64	12.6	**0.04**
AEP-TUC	DCT ATOVO-TUC	AEP-TUC	610	605	**5**	4371	4342	**29**	01:33	01:32	**00:01**	13.8	13.7	**0.1**
AEP-SLA	DCT ATOVO-TUC	AEP-SLA	728	723	**6**	5096	5073	**23**	01:53	01:53	**00:00**	16.1	16	**0.1**
EZE-LIM	DCT ATOVO-TUC	EZE-LIM	1795	1790	**5**	11829	11805	**24**	04:16	04:16	**00:00**	37.3	37.3	**0**
AEP-COR	DCT ROSARIO-ASISA	AEP COR (DCT ROS - ASISA)	404	402	**2**	3183	3172	**11**	01:05	01:05	**00:00**	10	9.9	**0.1**
MDZ-AEP	DCT KAMUV-SNT	MDZ-AEP	542	538	**4**	3453	3430	**13**	01:16	01:15	**00:01**	10.9	10.87	**0.03**
BRC-AEP	DCT LIMAY - ASADA	BRC AEP (DCT LIMAY - ASADA)	779	773	**6**	4706	4667	**39**	01:46	01:45	**00:01**	14.8	14.7	**0.1**
AEP-UAQ	via UT653 til MJ dct PAMAL + STAR	AEP UAQ	596	595	**1**	4410	4404	**6**	01:34	01:34	**00:00**	13.9	13.85	**0.05**

ROUTE	SEGMENT	MODIFICATION	ACTUAL NM	MODIF	SAVING	ACTUAL FUEL	MODIF	SAVING	ACTUAL TIME	MODIF	SAVING	ACTUAL C02	MODIF	SAVING
AEP-RGL	DCT DIL-RGL	AEP-RGL DCT DIL-RGL	1212	1185	**27**	8090	7934	**156**	03:00	02:57	**00:03**	25.4	24.9	0.5
RGL-AEP	DCT RGL-DIL	RGL-AEP DCT RGL-DIL	1179	1169	**10**	7185	7120	**65**	02:41	02:40	**00:01**	22.6	22.4	**0.2**
AEP - CRV	DCT DIL - CRV	AEP-CRV-AEP	846	832	**14**	5851	5744	**107**	02:09	02:07	**00:02**	18.4	18.1	**0.3**

APPENDIX C

INTERNATIONAL CIVIL AVIATION ORGANIZATION

SAM ATS ROUTE NETWORK VERSION 1.0

(Lima, December 2009)

Version1.0

Table of Contents

1. Executive Summary

1.1. Using airspace user requirements and Recommendation A36/23 as a reference, the ICAO South American Region is focused on improving airspace structure. To this end, the second meeting of the South American Implementation Group (SAM/IG/2) considered that a feasibility study should be carried out with a view to achieving an ATS route network that responds to the new aviation requirements and contemplates the new performance-based navigation operational concept.

1.2. In general, the analysis and diagnosis of the SAM ATS route network led to the conclusion that the main problem was that its development had always been based on specific requirements of isolated routes, without a comprehensive analysis that would take into account broader operational requirements, seeking a functional relationship among the various elements of the airspace structure, such as ATS routes, control sectors, control areas, TMAs, etc.

1.3. The SAM/IG/3 meeting, held in Lima, on 20-24 April 2009, recalled that the 36th General Assembly of ICAO had requested the Council to encourage Contracting States to improve air traffic efficiency leading to reduced emissions, to report developments in this field, and to expedite the development and implementation of routings and procedures leading to efficient fuel consumption for reducing aviation emissions. It also noted that the ALLPIRG/5 meeting, held in March 2006, had concluded that a global, consolidated and prioritised list of improvements in routes and terminal areas (TMAs) should be established in close coordination with airspace users; and that neighbouring PIRGs/States/air navigation service providers (ANSP) should work to expedite improvements on international routes.

1.4. In this respect, Conclusion SAM/IG/3-1 established that SAM States should take relevant action to comply with the guidelines and deadlines established in the ATS Route Network Optimisation Programme, in order to achieve an efficient use of airspace in the SAM Region, and attain an inter-operational air traffic management system available to all users during all flight phases, that meets the agreed safety levels, provides cost-efficient operations, is environmentally sustainable, and complies with national security requirements.

1.5. Accordingly, and with the assistance of Project RLA/06/901, the present document, entitled SAM ATS Route Network Version 1.0, was prepared pursuant to the Action Plan for the Optimisation of the SAM ATS Route Network, approved by the SAM/IG/3 meeting through Conclusion **SAM/IG/3-1**. This study was based on air traffic data collected by SAM States from 1 to 31 July 2009, as stipulated in Conclusion **SAM/IG/3-2**. It also took into account the work done by the SAMIG OPS/AIR Working Group in relation to the survey on PBN capacity of the aircraft fleet in the SAM Region.

1.6. The analysis of the route network, based on statistical data on air traffic movements, has resulted in a database that has permitted a complete diagnosis of each FIR in the SAM Region. Due to the large amount of processed data, it is possible to identify the main air traffic flows. The analysis was based on the following aspects: number of flights per city pair; number of flights on each ATS route; city pairs serviced by each ATS route; number of flights by aircraft type/operator; number of flights per flight level.

1.7. This study has permitted an analysis of the domestic and international route network with a view to determining which routes could and, in some cases, should be eliminated based on their utilisation. This could lead to a reduction of airspace complexity, through the re-design of airspace structure and the optimisation of air traffic routing in the SAM FIR. The criterion used for proposing the elimination of routes, and which needs to be assessed by the meeting, has been ATS routes with an air traffic movement of less than 30 monthly flights, which represents less than one daily flight in average.

1.8. The proposal of an exclusionary RNAV-5 airspace volume is under study. In general, the status of development of the database on navigation capabilities of the SAM fleet has not permitted a comprehensive analysis of a possible exclusionary RNAV-5 airspace volume. However, even in the absence of complete information, it may be inferred that, in most FIRs, at least 85% of en-route operations involve aircraft with RNAV-5 potential, based on the fact that they are last-generation aircraft, or according to the information obtained from the navigation capability database.

1.9. An assessment is made of "conventional" routes that should be eliminated or replaced by RNAV routes due to lack of ground radio aid coverage. In this respect, it was concluded that there were some "conventional" routes in the SAM Region that should be eliminated or replaced by RNAV routes due to lack of ground radio aid coverage.

1.10. The interface with the CAR route network is analysed, and it is expected that in Version 1.0 of the route network, this interface will take place through the reporting points that exist along the boundary between the two Regions, except for flights to the area of Miami and New York, in which an assessment of the use of WATRS airspace gateways could be done in coordination with the ICAO NACC Office, the States involved, and the FAA.

2. **Acronyms**

Lista de Acrónimos/ List of Acronyms

AIP	Publicación de información aeronáutica/Aeronautical Information Publication
AOM	Gestión del Espacio Aéreo / Airspace Management
ANS	Servicios de navegación aérea /Air navigation services
ANSP	Proveedores de Servicios de Navegación Aérea/Air Navigation Service Providers
ASM	Gestión del espacio aéreo/ Airspace Management
ATC	Control de tránsito aéreo/ Air Traffic Control
ATFM	Gestión de afluencia del tránsito aéreo/ Air Traffic Flow Management
ATM	Gestión del tránsito aéreo/ Air Traffic Management
ATS	Servicio de tránsito aéreo/ Air Traffic Services
CAR/SAM	Regiones Caribe y Sudamérica/Caribbean/South American Regions
CNS/ATM	Comunicaciones, navegación y vigilancia/Gestión del tránsito aéreo/ communications, Navigation and Surveillance/Air Traffic Management
CTA	Area de control /Control Area
DME	Equipo Radiotelemetrico/Distance-Measuring Equipment
FAA	Administración Federal de Aviación /Federal Aviation Administration
FDE	Detección y eliminación de fallas / Fault Detection and Exclusion
FIR	Región de información de vuelo /Flight Information Region
FMS	Sistema de gestión de vuelo /Flight Management System

FUA	Uso Flexible del Espacio Aéreo /Flexible use of airspace
GPI	Iniciativas del Plan Mundial / Global Plan Initiatives
GNSS	Sistema mundial de navegación por satélite / Global Navigation Satellite System
GREPECAS	Grupo Regional de Planificación y Ejecución CAR/SAM/ CAR/SAM Regional Planning and Implementation Group
IATA	Asociación del Transporte Aéreo Internacional/ International Air Transport Association
IFALPA	Federación Internacional de Asociaciones de Pilotos de Líneas Aéreas/International Federation of Air Line Pilots' Associations
IFATCA	Federación Internacional de Asociaciones de Controladores de Tránsito Aéreo/International Federation of Air Traffic Controllers' Associations
IRU/INS	Unidad de referencia inercial/Sistema de navegación inercial/ Inertial Reference Unit/Inertial Navigation System
NACC	Norteamérica, Centroamérica y Caribe/North America, Central America and Caribbean
NAT	Atlántico septentrional /North Atlantic
NDB	Radiofaro no direccional /Non-Directional Beacon
NOTAM	Aviso al Personal Encargado de las Operaciones de Vuelo/Notice to Airmen
OPS/AIR	Operaciones y Aeronavegabilidad/Operations and Airworthiness
PBN	Navegación Basada en la Performance /Performance-Based Navigation
RLA	Regional Latinoamericano/Latin American Region
RNAV	Navegación de área/Area Navigation
RNAV Route:	Ruta de navegación de área/Area navigation route
RNP	Performance denavegación requerida/Required Navigation Performance
RNP AR	Requerimiento de aprobación para la performance de navegación requerida/ Required Navigation Performance Approval Required
SAM	Sudamérica/South America
SAM/IG	Grupo de Implantación SAM/SAM Implementation Group
SARPS	Normas y métodos recomendados (OACI)/Standards and Recommended Practices (ICAO)
SID	Salida Normalizada por Instrumentos/Standard Instrument Departure
SSR	Radar secundario de vigilancia/Secondary Surveillance Radar
STAR	Llegada Normalizada por Instrumentos/Standard Instrument Arrival
TLS	Nivel de seguridad deseado/Target Level of Safety
TMA	Area Terminal/Terminal Area
UTA	Área de Control Superior / Upper airspace
VHF	Muy alta frecuencia /Very High Frequency
VOR/DME	Radiofaro omnidireccional VHF/Equipo radiotelemétrico/Very High Frequency Omnidirectional Radio Range/Distance-Measuring Equipment
WATRS	Sistema de rutas del Atlántico Occidental / West Atlantic route system

3. Introduction

3.1. This document, entitled SAM ATS Route Network Version 1.0, was developed with the assistance of Project RLA/06/901, pursuant to item 2.2.5 of the Action Plan for the Optimisation of the SAM ATS Route Network, approved at the third meeting of the SAM Implementation Group (SAMIG/3) through Conclusion **SAM/IG/3-1**. The aforementioned study was based on air traffic data collected by SAM States pursuant to Conclusion **SAM/IG/3-2**. Given the large amount of data processed for the study, it was not possible to include in the document all of the information obtained. However, the complete information, in Excel format, is available on the following website: http://www.lima.icao.int/submenu1.asp?Url=/ICAOSAMNET/AirNav-eDocumentsMenu.asp. SAM States could use this information for national planning.

3.2. Likewise, the database on navigation capabilities of the SAM fleet was used as a reference for the analysis.

3.3. The data and graphs supporting this report appear at the end, under the State and FIR to which they belong. In case a State has more than one FIR, the respective FIRs will also be listed in the section corresponding to the State.

4. Expectations regarding the ATM Operational Concept and the SAM ATS Route Network Optimisation Programme

4.1. The main objective of airspace organisation and management (AOM), a component of the global ATM operational concept, is to maximise the efficient use of airspace, while maintaining the required safety level. The incorporation of the global ATM operational concept into the Global Air Navigation Plan has made it easier to plan and implement new innovative methods for achieving significant improvements in airspace organisation and management. The set of Global Plan Initiatives (GPI) directly related to AOM offers the guidelines required for the planning and implementation of an optimum airspace structure. These initiatives include:

a) GPI 1 – Flexible use of airspace

b) GPI 5 – RNAV and RNP

c) GPI 7 – Dynamic and flexible management of ATS routes

d) GPI 8 - Collaborative airspace design and management

e) GPI 10 - Terminal area design and management

f) GPI 11 – RNAV and RNP SIDs and STARs

4.2. Based on the aforementioned GPIs, SAM States, with the assistance of Project RLA/06/901, have developed the SAM Route Network Optimisation Programme and the corresponding Action Plan, which were approved at the SAM/IG/3 meeting (**Conclusion SAM/IG/3-1**). This programme should be implemented in phases, in order to obtain operational benefits as early as possible. Starting in Phase 2, the concept of route network versions would be incorporated, taking into account that the airspace structure changes based on traffic growth, the displacement of traffic demand from one region or airport to another, available technologies, amongst other aspects. The use of route network versions reflects the

need for an integrated periodic review to ensure that the best possible airspace structure is always in place. Thus, the programme will be implemented in three phases:

a) **Phase 1 – Implementation of RNAV-5**
The approved programme contemplates the implementation of RNAV-5 in Phase 1 of the route network optimisation programme, taking into account that it is a concept that will facilitate said optimisation. This implementation phase will be carried out in keeping with the SAM PBN Implementation Programme approved by the SAM/IG/2 meeting, which is based on the PBN Roadmap approved by GREPECAS.

b) **Phase 2 – Implementation of Version 1 of the SAM ATS Route Network**
The second phase would correspond to Version 1.0 of the SAM ATS route network, under a new integrated development concept. The first version should include a broader analysis of the route network, based on statistical data of air traffic movements and fleet navigation capacity, with a view to eliminating unused routes, excluding or reducing the use of "conventional" routes in a given airspace volume where most users is RNAV-5 capable. This phase is directly related to phase 1, and a significant part of the portion related to the airspace concept envisaged in the RNAV-5 implementation programme for the SAM Region would be described in this phase of the route network optimisation programme. It would be desirable for phases 1 and 2 to be implemented on the same date. Since this might not be possible due to the complexity of the studies concerning the route network, this programme will keep the two phases separate.

c) **Phase 3 – Implementation of Version 2 of the SAM ATS Route Network**
The third phase would correspond to version 2 of the SAM ATS route network, and should involve a complete restructuring of the route network, based on a full integration between ATS routes, control sectors, TMAs, etc., through the use of the flexible use of airspace (FUA) concept. This phase would require specific "airspace modelling" and fast-time ATC simulation tools.

5. Analysis of the route network, based on statistical data on air traffic and fleet capacity

5.1. The analysis of the route network, based on statistical data on air traffic movements, has resulted in a database that has permitted a complete analysis of each FIR in the SAM Region. Taking into account the large amount of processed data, the inserted information will highlight the main air traffic flows. The analysis was based on the following aspects.

a) **Number of flights per city pair**
The number of flights per city pair is aimed at evaluating the main traffic flows in the SAM Region, taking into account that cities/regions that generate more traffic can be identified in order to prioritise the establishment of direct and/or parallel unidirectional routes to serve these flows.

b) **Number of flight on each ATS route**
The number of flights on each ATS route is essential for verifying the suitability of existing routes and checking if any routes need to be eliminated due to their low level of utilisation.

c) **City pairs serviced by each ATS route**
The combination of the number of flights per city pair with the number of flight on each ATS route has permitted the identification of city pairs serviced by each ATS route. An analysis was conducted to determine the type of flow (domestic or international) on each ATS route, and the possibility of implementing unidirectional parallel routes and "by-pass" routes when warranted by the amount and mix of air traffic.

d) **Number of flights by aircraft type/operator**
The analysis of data on aircraft operators and types was divided into 4 different categories:

i) Flights using aircraft with RNAV-5 approval potential, based on the use of state-of-the-art aircraft or aircraft considered to be potentially RNAV-5 "eligible" according to the database on navigation capabilities developed by Project RLA/99/901;
ii) Flights using aircraft whose RNAV-5 approval potential cannot be verified, due to lack of some information in the aforementioned database on navigation capabilities;
iii) Flights using aircraft with no RNAV-5 approval potential, according to the database on navigation capabilities developed by Project RLA/99/901. In this case, aircraft with only FMS/VOR-DME were considered as having no RNAV-5 approval potential, since the VORs-DMEs that exist in the SAM Region will not be enough to ensure the required coverage/geometry.
iv) Flight using aircraft for which there is no information available.

e) **Number of flight per flight level**
The analysis of the number of flights per flight level was done with a view to determining the level of utilisation of each flight level in each FIR, and identifying the airspace volume in which it would be advisable to apply RNAV-5 as exclusionary airspace, in order to include as many operations as possible.

6. Detailed description of the new SAM route network

Data analysis, by FIR

6.1. Argentina

Ezeiza FIR (Appendix A)

Number of flight per city pair

6.1.1. The analysis of the city pairs serviced in the Ezeiza FIR revealed the existence of 174 city pairs involved in the provision of ATS services, where 114 city pairs accounted for 95% of flights, showing a significant dispersion of flights. In this case, airspace planning should prioritise flows with the largest air traffic volume.

Number of flights on each ATS route

6.1.2. Information obtained from the AIP of Argentina revealed the existence of 62 ATS routes in the upper airspace of the Ezeiza FIR. A comparison between the collected data and the route network in the AIP shows that there is a significant number of routes with less than 30 flights, including 30 routes with zero flights. Taking into account the criterion whereby a movement of less than 30 flights warrants the elimination of the route, a total of 11 international routes and 29 domestic routes could be eliminated. However, incoming and outgoing flights on international routes in the northern sector of the Ezeiza FIR, to/from the Montevideo FIR, are normally in the ascent/descent phase, and have not been included in the data collection exercise. Thus, those routes would not be included in the proposed elimination process.

City pairs serviced by each ATS route

6.1.3. There is significant traffic on routes ATS UA305, UA306 and UL550, which combine domestic and international traffic. A more in-depth analysis could lead to the implementation of parallel or “by-pass” routes. It should also be noted that any minor change resulting in a reduction of the distance flown on these routes could result in significant fuel savings and, thus, a reduction of greenhouse gas emissions. Taking into account the amount of information available, only 2 examples have been included in **Appendix A.**

Number of flights by aircraft type/operator

6.1.4. The analysis of aircraft types/operators in the Ezeiza FIR showed that 56.55% of flights were conducted on aircraft with RNAV-5 potential. An additional 35.66% of flights probably could also be approved for RNAV-5, but the information available on the database of navigation capabilities does not lead to a definitive conclusion due to the lack of data on the aircraft operator. There is no information about 7.16% of flights (lack of information on the database, or they are aircraft from other regions) and 0.6% is carried out by aircraft with no RNAV-5 potential.

6.1.5. **Number of flights per flight level**

6.1.6. The information collected on the Ezeiza FIR has not permitted an appropriate analysis, since most data are made up by random figures and do not correspond to flight level.

Resistencia FIR (Appendix B)

Number of flights per city pair

6.1.7. The analysis of the data from the Resistencia FIR showed that 174 city pairs were involved in the provision of ATS, where 80 city pairs accounted for 95% of flights, revealing some flight dispersion. In this case, airspace planning should prioritise those flows with a larger volume of air traffic.

Number of flights on each ATS route

6.1.8. The information obtained from the AIP of Argentina revealed the existence of 18 ATS routes in the upper airspace of the Resistencia FIR. A comparison between the data collected and the route network in the AIP showed that there are 7 routes with less than 30 flights. Taking into account the criterion whereby a movement of less than 30 flights warrants the elimination of the route, a total of 5 international routes and 2 domestic routes could be eliminated.

City pairs serviced by each ATS route

6.1.9. No ATS routes in which the amount and characteristics of air traffic flow could lead to the implementation of parallel or "by-pass" routes were found. Taking into account the amount of information available, only one example was inserted in the section corresponding to the Resistencia FIR.

Number of flights by aircraft type/operator

6.1.10. The analysis of aircraft type/operator in the Resistencia FIR revealed that 65.54% of flights involved aircraft with RNAV-5 potential. Another 28.17% of flights might also be RNAV-5 approved, but the information available in the database on navigation capabilities does not permit to arrive at that final conclusion, due to lack of data on the aircraft operator. There is no information about 5.99% of flights (no information on the database or they involve aircraft from other regions) and 0.3 % involve aircraft with no RNAV-5 potential.

Number of flights per flight level

6.1.11. The information collected on the Resistencia FIR revealed that 50% of flights are performed between FL 350 and FL 380. 90% of flights are conducted in RVSM airspace. Atypically, it is noted that FL 300 is scarcely used (only 2,13% of flights), with a frequency that is lower than that of FL 250.

Mendoza FIR (Appendix C)

Number of flights by city pair

6.1.12. In the Mendoza FIR, 118 city pairs are involved in the provision of ATS services, 68 (58%) of which account for 95% of flights, showing a relative dispersion of flights. In this case, airspace planning should give priority to flows with the largest air traffic volume. A graph depicting the main city pairs appears in the section corresponding to the Mendoza FIR.

Number of flights on each ATS route

6.1.13. The information obtained from the AIP of Argentina revealed the existence of 21 ATS routes in the upper airspace of the Mendoza FIR. A comparison between the data collected and the route network in the AIP showed that there is a significant number of routes with less than 30 flights, including 5 routes (UL322, UM799, UR683, UW14 and UW15) with no traffic (zero flights), 8 routes (UW3, UW23, UW24, UW37, UW44, UW57, UW68 and UT653) with 1 to 10 flights, and off-route flights, although these flights only account for 2% of the air traffic movement analysed. Furthermore, these latter flights were conducted with two or more routes, which suggests that airspace structure and configuration would require a more in-depth analysis in order to establish the possibility of eliminating, consolidating and/or realigning them.

City pairs serviced by each ATS route

6.1.14. There is significant traffic in ATS routes UA306 and UM424, which combine domestic and international traffic of the traffic flow between SAEZ/SCEL, including intermediate cities, where a more in-depth analysis could lead to the implementation of parallel routes, mainly due to airspace configuration between the Mendoza and Santiago FIRs, which involve the Andes mountain range. Due to the amount of information available, only some examples are shown in the section corresponding to the Mendoza FIR.

Number of flights per aircraft type/operator

6.1.15. The analysis of aircraft type/operator in the Mendoza FIR showed that more than 90% of flights involved aircraft with RNAV-5 potential. However, the information available in the database on navigation capabilities does not permit a final conclusion, due to lack of data on the aircraft operator. The graph showing the main aircraft operators/types appears in the section corresponding to the Mendoza FIR.

Number of flights per flight level

6.1.16. The information collected on the Mendoza FIR has not permitted a proper analysis, due to the fact that most of the data is geared to another type of analysis (RVSM), changes in flight level when entering and exiting the FIR, and the large amount of ascending and descending flights between the Mendoza and Santiago TMAs.

Córdoba FIR (Appendix D)

Number of flights per city pair

6.1.17. In the Córdoba FIR, 243 city pairs involved in the provision of ATS services were identified, 139 (57%) of which account for 95% of flights, showing a relative dispersion of flights. In this case, airspace planning should give priority to flows with the largest air traffic volume. A graph showing the main city pairs appears in the section corresponding to the Córdoba FIR.

Number of flights on each ATS route

6.1.18. The information obtained from the AIP of Argentina showed the existence of 30 ATS routes in the upper airspace of the Córdoba FIR. A comparison between the data collected and the route network in the AIP shows that there are 15 routes with less than 30 flights, including 5 routes (UL650, UR560, UT651, UW117 and UW19) with no traffic (zero flights) and 10 routes (UW2, UW3, UW6, UW7, UW15, UW16, UW23, UM529, UM789 and UR550) with 1-29 flights, all of which account for only 2.6 % of the air traffic movement analysed. Likewise, 8% of flights are off-route and/or direct flights, which, given airspace structure and configuration, suggests the need for a more in-depth analysis to establish the possibility of eliminating, consolidating and/or realigning the cited routes.

City pairs serviced by each ATS route

6.1.19. There is significant traffic in ATS routes UL505, UW5 and UA307, which combine domestic and international traffic of the traffic flow between SAEZ-SPIM, SAEZ-SCEL and SBRJ/SBGR-SAEZ, including intermediate cities. A more in-depth analysis of these routes could lead to the implementation of parallel routes, mainly due to complex airspace configuration in the Córdoba, Mendoza and Ezeiza FIRs. Given the amount of information available, only a few examples are shown in the section corresponding to the Córdoba FIR.

Number of flights by aircraft type/operator

6.1.20. The analysis of aircraft types/operators in the Mendoza FIR showed that more than 90% of flights involved aircraft with RNAV-5 potential. However, the information available in the database on navigation capabilities does not permit a final conclusion, given the lack of data on the aircraft operator. A graph showing the main aircraft operators/types appears in the section corresponding to the Córdoba FIR.

Number of flights per flight level

6.1.21. The information collected on the Córdoba FIR has not permitted a proper analysis, due to the fact that most of the data is geared to another type of analysis (RVSM), changes in flight level when entering and exiting the FIR, and the large amount of ascending and descending flights between the Córdoba and Ezeiza TMAs.

Comodoro Rivadavia FIR (Appendix E)

Number of flights per city pair

6.1.22. In the Comodoro Rivadavia FIR, 108 city pairs involved in the provision of ATS were identified, 78 (72%) of which account for 94% of flights, showing a relative dispersion of flights. In this case, airspace planning should give priority to flows with the largest air traffic volume.

Number of flights on each ATS route

6.1.23. Information obtained from the AIP of Argentina revealed the existence of 35 ATS routes in the upper airspace of the Comodoro Rivadavia FIR. A comparison between the data collected and the route network in the AIP shows that there are 24 routes with less than 30 flights, including 8 routes (UB561, UB682, UL775, UW36, UW38, UW46, UW50 and UW63) with no air traffic movement (zero flights) and 16 routes (UT101, UT102, UT103, UT105, UT106, UT657, UW18, UW33, UW39, UW41, UW42, UW54, UW56, UW58, UT658 and UT656) with 1-29 flights, all of which account for only 6 % of the air traffic movement analysed. However, given its nature of remote airspace and the distance between cities in the Comodoro Rivadavia FIR, a more in-depth analysis would be required to establish the possibility of eliminating, consolidating and/or realigning the cited routes.

City pairs serviced by each ATS route

6.1.24. Traffic density on the ATS routes of the Comodoro Rivadavia FIR is relatively low, where ATS route UA570 accounts for more than 50% of flights. Given its nature of remote airspace and the distance between cities in the Comodoro Rivadavia FIR, it would be an eligible scenario for the implementation of parallel routes. Given the amount of information available, only a few examples are shown in the section corresponding to the Comodoro Rivadavia FIR.

Number of flights by aircraft type/operator

6.1.25. The analysis of aircraft types/operators in the Comodoro Rivadavia FIR revealed that between 70% and 80% of flights involved aircraft with RNAV-5 potential. However, the information available in the database on navigation capabilities does not permit a final conclusion, given the lack of data on the aircraft operator. A graph showing the main aircraft operators/types appears in the section corresponding to the Comodoro Rivadavia FIR.

Number of flights per flight level

6.1.26. The information collected on the Comodoro Rivadavia FIR shows that 90% of flights are conducted in RVSM airspace.

6.2. **Bolivia**

La Paz FIR (Appendix F)

Number of flights per city pair

6.2.1. In the La Paz FIR, 114 city pairs involved in the provision of ATS were identified, 66 (58%) of which account for 84% of air traffic movement, showing a relative dispersion of flights. In this case, airspace planning should give priority to flows with the largest air traffic volume. A graph showing the main city pairs appears in the section corresponding to the La Paz FIR.

Number of flights on each ATS route

6.2.2. Information obtained from the AIP of Bolivia revealed the existence of 32 ATS routes in the upper airspace of the La Paz FIR. A comparison between the data collected and the route network in the AIP shows that there are 11 routes with less than 30 flights, including 10 routes (UA568, UA573, UB554, UB652, UL216, UR550, UR559, UW10, UW12 and UW13) with no air traffic movement (zero flights) and 11 routes (UA558, UL304, UL417, UL540, UL793, UL797, UR550, UR559, UW3, UW7 and UW8) with 1-29 flights, all of which account for only 2 % of the air traffic movement analysed. However, a more in- depth analysis will be required to establish the possibility of eliminating, consolidating and/or realigning the cited routes.

City pairs serviced by each ATS route

6.2.3. Traffic density in the ATS routes of the La Paz FIR is relatively moderate, where ATS routes UA304 and UB677 account for more than 60% of flights combining domestic and international traffic of the traffic flow between SBRJ/SBGR-SPIM, including intermediate cities. A more in-depth analysis of these routes could lead to the implementation of parallel routes. Given the amount of information available, only a few examples are shown in the section corresponding to the La Paz FIR.

Number of flights by aircraft type/operator

6.2.4. The analysis of aircraft types/operators in the La Paz FIR revealed that between 40% and 50% of flights involved aircraft with RNAV-5 potential. However, the information available in the database on navigation capabilities does not permit a final conclusion, given the lack of data on the aircraft operator. A graph showing the main aircraft operators/types appears in the section corresponding to the La Paz FIR.

Number of flights per flight level

6.2.5. The information collected on the La Paz FIR has not permitted a proper analysis, due to the fact that most of the data is geared to another type of analysis (RVSM), changes in flight level when entering and exiting the FIR, and the large amount of ascending and descending flights between the La Paz and Viru Viru TMAs.

6.3. **Brazil**

Amazonica FIR (Appendix G)

Number of flights per city pair

6.3.1. The analysis of city pairs serviced in the Amazonica FIR revealed that 640 city pairs are involved in the provision of ATS, 229 of which account for 95% of flights, showing a significant dispersion of flights. In this case, airspace planning should give priority to flows with the largest air traffic volume, taking into account the significant volume of airspace in the FIR, which points to the possibility of spatial de-concentration of air traffic.

Number of flights on each ATS route

6.3.2. Information obtained from the AIP of Brazil revealed the existence of 60 ATS routes in the upper airspace of the Amazonica FIR. A comparison between the data collected and the route network in the AIP shows a significant number of routes with less than 30 flights, including 2 routes with no air traffic movement. Taking into account the criterion whereby a movement of less than 30 flights warrants the elimination of the route, a total of 12 international routes and 6 domestic routes could be eliminated. A total of 309 flights were conducted outside of the ATS routes, 57 of which were between SBBE and SBMA and 58 between SBMA and SBBR. This could point to the need for the implementation of two ATS routes. However, taking into account that there is no significant concentration of air traffic in the SBMA region, and the existence of the Amazonica upper control area (UTA) that coincides with the boundaries of the Amazonica FIR, the implementation of said routes seems unnecessary.

City pairs serviced by each ATS route

6.3.3. No ATS routes in which the amount and characteristics of air traffic flow could lead to the implementation of parallel or "by-pass" routes were identified. Given the amount of information available, only 1 example was inserted in the section corresponding to the Amazonica FIR.

Number of flights by aircraft type/operator

6.3.4. The analysis of aircraft types/operators in the Amazonica FIR revealed that 89.05% of flights involved aircraft with RNAV-5 potential, given the prevalence of commercial flights that use state-of-the-art aircraft. The lack of data on the Brazilian general aviation fleet has prevented a more detailed analysis of a significant part of the remaining 10.95% of flights.

Number of flights per flight level

6.3.5. The information collected on the Amazonica FIR revealed that 54.38% of flights are conducted between FL 350 and FL 380, and that 95,51% of flights are conducted in RVSM airspace.

Brasilia FIR (Appendix H)

Number of flights per city pair

6.3.6. The analysis of city pairs serviced in the Brasilia FIR revealed that 972 city pairs are involved in the provision of ATS, 312 of which account for 95% of flights. This shows a significant dispersion of flights in a relatively small airspace, which hinders airspace planning, where flows with the largest air traffic volume should be prioritised.

Number of flights on each ATS route

6.3.7. Information obtained from the AIP of Brazil revealed the existence of 74 ATS routes in the upper airspace of the Brasilia FIR. A comparison between the data collected and the route network in the AIP revealed the existence of 17 routes with a significantly low number of flights (less than 30). Taking into account the criterion whereby a movement of less than 30 warrants the elimination of the route, a total of 6 international routes and 11 domestic routes could be eliminated.

City pairs serviced by each ATS route

6.3.8. There is significant traffic, *inter alia*, in ATS routes UA312, UA317, UN741, UN866, UW10, UW12, UW13, UW2 and UW58, which combine domestic and international traffic. A more in-depth analysis of these routes could lead to the implementation of parallel or "by-pass" routes. It should also be noted that any minor change resulting in a reduction of the distance flown on these routes could lead to significant fuel savings, and, thus, a reduction in greenhouse gas emissions. Given the amount of information available, only 1 example was inserted in the section corresponding to the Brasilia FIR.

Number of flights by aircraft type/operator

6.3.9. The analysis of aircraft types/operators in the Brasilia FIR revealed that 91.53% of flights involved aircraft with RNAV-5 potential, given the prevalence of commercial flights that use state-of-the-art aircraft. The lack of data on the Brazilian general aviation fleet has prevented a more detailed analysis of a significant part of the remaining 8.47% of flights.

Number of flights per flight level

6.3.10. The information collected on the Brasilia FIR revealed that 56.77% of flights are conducted between FL 350 and FL 380, and 94.27% of flights are conducted in RVSM airspace. Atypically, it is noted that FL 290 is scarcely used (only 1,06% of flights), with a frequency that is lower than that in FL 270 or 280.

Curitiba FIR (Appendix I)

Number of flights per city pair

6.3.11. The analysis of city pairs serviced in the Curitiba FIR revealed that 413 city pairs are involved in the provision of ATS, where 200 city pairs account for 95% of flights, showing a significant dispersion of flights in a relatively small airspace. This hinders airspace planning, in which flows with the largest air traffic volume should be prioritised.

Number of flights on each AT route

6.3.12. Information obtained from the AIP of Brazil revealed the existence of 68 ATS routes in the upper airspace of the Curitiba FIR. A comparison between the data collected and the route network in the AIP revealed the existence of a significant number of routes with a low number of flights (less than 30), including 2 routes with zero air traffic movement. Taking into account the criterion whereby a movement of less than 30 warrants the elimination of the route, a total of 9 international routes and 3 domestic routes could be eliminated.

City pairs serviced by each ATS route

6.3.13. There is significant traffic, *inter alia*, in ATS routes UA310, UA312, UM788, UN857, UW19, UW24, UW25, UW50 and UW6, which combine domestic and international traffic. A more in-depth analysis of these routes could lead to the implementation of parallel or "by-pass" routes. There is also significant traffic in routes UW62, UW63 and UW64, which, together with route UW50, make up the route system between the Sao Paulo and Rio de Janeiro TMAs. These routes should be exclusively used for traffic between the airports located in these two TMAs, and other routes should be used for traffic between other airspaces and said TMAs. It should also be noted that any minor change resulting in a reduction of the distance flown on these routes could lead to significant fuel savings, and, thus, a reduction in greenhouse gas emissions. Given the amount of information available, only 1 example was inserted in the section corresponding to the Curitiba FIR.

Number of flights by aircraft type/operator

6.3.14. The analysis of aircraft types/operators in the Curitiba FIR revealed that 93.10% of flights involved aircraft with RNAV-5 potential, given the prevalence of commercial flights that use state-of-the-art aircraft. In the specific case of the Curitiba FIR, a significant concentration of flights conducted by A319, A320, B737 and B738 aircraft (64,84%) can be noted. The lack of data on the Brazilian general aviation fleet has prevented a more detailed analysis of a significant part of the remaining 6.9% of flights. A graph showing the main aircraft operators/types in the Curitiba FIR appears in the section corresponding to the Curitiba FIR.

Number of flights per flight level

6.3.15. The information collected on the Curitiba FIR revealed that the distribution of flight levels is atypical, given the large amount of air traffic between the Sao Paulo and Rio de Janeiro TMAs, most of which does not use flight levels in RVSM airspace. Thus, 83.10% of flights are conducted in RVSM airspace.

Recife FIR (Appendix J)

Number of flights per city pair

6.3.16. The analysis of city pairs serviced in the Recife FIR showed that 468 city pairs were involved in the provision of ATS services, 175 of which account for 95% of flights, showing a significant dispersion of flights. In this case, airspace planning should give priority to flows with the largest air traffic volume.

Number of flights on each ATS route

6.3.17. Information obtained from the AIP of Brazil revealed the existence of 34 ATS routes in the upper airspace of the Recife FIR. A comparison between the data collected and the route network in the AIP showed the existence of 4 routes with less than 30 flights. Taking into account the criterion whereby a movement of less than 30 warrants the elimination of the route, a total of 4 domestic routes could be eliminated.

City pairs serviced by each ATS route

6.3.18. There is significant traffic, *inter alia*, in ATS routes UN866, UN873, UW10, UW33, UW50, UW58 and UZ10, which combine domestic and international traffic. A more in-depth analysis of these routes could lead to the implementation of "by-pass" routes. Special attention should be given to ATS route UW58, which is used for incoming and outgoing traffic between the northeast of Brazil and the Sao Paulo TMA, and between some cities in the northeast. It should also be noted that any minor change resulting in a reduction of the distance flown on these routes could lead to significant fuel savings, and, thus, a reduction in greenhouse gas emissions. Given the amount of information available, only 1 example was inserted in the section corresponding to the Recife FIR.

Number of flights by aircraft type/operator

6.3.19. The analysis of aircraft types/operators in the Recife FIR revealed that 95.70% of flights involved aircraft with RNAV-5 potential, given the prevalence of commercial flights that use state-of-the-art aircraft. In the specific case of the Recife FIR, a significant concentration of flights conducted by A320, B737 and B738 aircraft (57,40%) can be noted. The lack of data on the Brazilian general aviation fleet has prevented a more detailed analysis of a significant part of the remaining 4.30% of flights.

Number of flight per flight level

6.3.20. The information collected on the Recife FIR showed that 99.95% of flights are conducted in RVSM airspace. Atypically, it was noted that no flights used FL 270 during the period under analysis.

6.4. **Chile**

Antofagasta/Santiago FIR (Appendix K)

Number of flights per city pair

6.4.1. In the Santiago-Antofagasta FIR, 131 city pairs involved in the provision of ATS were identified, 55 (42%) of which account for 64% of flights, showing a relative dispersion of flights. In this case, airspace planning should give priority to flows with the largest air traffic volume. A graph showing the main city pairs appears in the section corresponding to the Antofagasta/Santiago FIR.

Number of flights on each ATS route

6.4.2. Information obtained from the AIP of Brazil revealed the existence of 32 ATS routes in the upper airspace of the Antofagasta-Santiago FIR. A comparison between the data collected and the route network in the AIP showed a significant number of routes with much less than 30 flights, including 5 routes (UB652, UL322, UM424, UM789, UM799 and UR683) with no air traffic movement (zero flights), as well as random, direct and/or off-route flights. However, these flights account for only 2.5% of the air traffic movement analysed, suggesting that the structure and configuration of the airspace would require a more in-depth analysis to establish the possibility of eliminating and/or realigning said routes.

City pairs serviced by each ATS routes

6.4.3. There is significant traffic in continental airspace ATS routes UW200 and UT106, which combine domestic and international traffic of traffic flows KMIA/SPIM- SCEL, including intermediate cities. Taking into account airspace configuration in the Antofagasta-Santiago FIR and the predominantly north-south air traffic movement, which has generated parallel or almost parallel routes, a more in-depth analysis would enable improvements to the structure of the aforementioned routes. It should be noted that parallel routes UL780 and UL302 in the oceanic airspace of the SCEL/SPIM corridor already have an RNP10 navigation specification. Given the amount of information available, only a few examples are shown in the section corresponding to the Antofagasta/Santiago FIR.

Number of flights by aircraft type/operator

6.4.4. The analysis of aircraft types/operators in the Antofagasta/Santiago FIR revealed that more than 90% of flights involved aircraft with RNAV-5 potential. However, the information available in the database on navigation capabilities does not permit a definitive conclusion, due to lack of data on the aircraft operator. A graph showing the main aircraft operators/types appears in the section corresponding to the Mendoza FIR.

Number of flights per flight level

6.4.5. The information collected on the Antofagasta/Santiago FIR has not permitted a proper analysis, due to the fact that most of the data is geared to another type of analysis (RVSM), changes in flight level when entering and exiting the FIR, and the large amount of ascending and descending flights between the Mendoza and Santiago TMAs.

Puerto Montt FIR (Appendix L)

Number of flights per city pair

6.4.6. In the Puerto Montt FIR, 20 city pairs involved in the provision of ATS were identified, 15 (75%) of which account for 99% of flights. In this case, airspace planning should give priority to flows with the largest air traffic volume. A graph showing the main city pairs appears in the section corresponding to the Puerto Montt FIR.

Number of flights on each ATS route

6.4.7. Information obtained from the AIP of Chile revealed the existence of 11 ATS routes in the upper airspace of the Puerto Montt FIR, 3 (27%) of which account for 87% of flights. A comparison between the data collected and the route network in the AIP shows 5 routes with less than 30 flights, including 4 routes (UB566, UG551, UL775 and UT112) with no air traffic movement (zero flights), as well as direct flights. However, these flights account for only 1.7% of the air traffic movement analysed. Given airspace configuration and the mainly north-south traffic flow in the Puerto Montt FIR, a more in-depth analysis would be required to establish the possibility of eliminating, consolidating and/or realigning the aforementioned routes.

City pairs serviced by each ATS route

6.4.8. There is significant traffic on continental airspace ATS routes UW101, UT100 and UT106, which combine domestic and international traffic. However, the Puerto Montt FIR supports overflights between the Oceanica (Chile) and the Comodoro Rivadavia (Argentina) FIRs, whose routes connect cities in the Asia-Pacific Region with the SAM Region. This would have to be considered in a more in-depth analysis for the elimination and/or realignment of routes with a given traffic density. Given the amount of information available, only a few examples are shown in the section corresponding to the Puerto Montt FIR.

Number of flights by aircraft type/operator

6.4.9. The analysis of aircraft types/operators in the Puerto Montt FIR showed that more than 80% of flights involved aircraft with RNAV-5 potential. However, the information available in the database on navigation capabilities does not permit a final conclusion, due to lack of data on the aircraft operator. A graph showing the main aircraft operators/types appears in the section corresponding to the Puerto Montt FIR.

Number of flights per flight level

6.4.10. The information collected on the Puerto Montt FIR has not permitted a proper analysis, due to the fact that most of the data is geared to another type of analysis (RVSM), changes in flight level when entering and exiting the FIR, and the large amount of ascending and descending flights.

Punta Arenas FIR (Appendix M)

Number of flights per city pair

6.4.11. In the Punta Arenas FIR, 20 city pairs involved in the provision of ATS were identified, 12 (60%) of which account for 90% of flights, showing a relative dispersion of flights. In this case, airspace planning should give priority to flows with the largest air traffic volume. A graph showing the main city pairs appears in the section corresponding to the Punta Arenas FIR.

Number of flights on each ATS route

6.4.12. Information obtained from the AIP of Chile revealed the existence of 8 ATS routes in the upper airspace of the Punta Arenas FIR. A comparison between the data collected and the route network in the AIP showed that route UT100 alone accounts for 88% of flights, and that there are 4 routes with less than 30 flights, including 4 routes (UB561, UT102, UW56 and UW115) with no air traffic movement (zero flights). However, given its nature of remote airspace and the distance between cities in the Punta Arena FIR, a more in- depth analysis would be required to establish the possibility of eliminating, consolidating and/or realigning the cited routes.

City pairs serviced by each ATS route

6.4.13. There is relatively low-density traffic in the ATS routes of the Punta Arenas FIR, which mainly combine domestic traffic. However, the Punta Arenas FIR supports overflights between the Oceanica (Chile) and the Comodoro Rivadavia (Argentina) FIRs, whose routes connect cities of the Asia-Pacific Region with the SAM Region. This would have to be considered in a more in-depth analysis to determine the elimination and/or realignment of routes with a given traffic density. Given the amount of information available, only a few examples are shown in the section corresponding to the Punta Arenas FIR.

Number of flights by aircraft type/operator

6.4.14. The analysis of aircraft types/operators in the Punta Arenas FIR revealed that 70 to 80% of flights involved aircraft with RNAV-5 potential. However, the information available in the database on navigation capabilities does not permit a final conclusion, due to lack of data on the aircraft operator. A graph showing the main aircraft operators/types appears in the section corresponding to the Mendoza FIR.

Number of flights per flight level

6.4.15. The information collected on the Punta Arenas FIR shows that almost all flights are conducted in RVSM airspace.

Oceanico FIR (Appendix N)

Number of flights per city pair

6.4.16. In the Oceanico FIR, 18 city pairs involved in the provision of ATS were identified, where 35% of air traffic movement takes place between cities of the Asia-Pacific, CAR, NAM and SAM Regions. In this case, airspace planning should give priority to flows with the largest air traffic volume. A graph showing the main city pairs appears in the section corresponding to the Oceanico FIR.

Number of flights on each ATS route

6.4.17. Information obtained from the AIP of Chile revealed the existence of 2 ATS routes (UL401 and UL348) in the upper airspace of the Oceanico FIR. A comparison between the data collected and the route network in the AIP shows that, in addition to the published ATS routes, there is also air traffic flow through UPR (user-preferred routes), random, or direct routes, which account for 57% of flights, mainly due to airspace characteristics in the Oceanico FIR, including meteorological conditions.

City pairs serviced by each ATS route

6.4.18. There is relatively low-density traffic in the ATS routes of the Oceanico FIR, where UPR, random, or direct routes account for most traffic volume upon connecting inter-regional city pairs, mainly with the Asia-Pacific Region.

Number of flights by aircraft type/operator

6.4.19. The analysis of aircraft types/operators in the Oceanico FIR showed that more than 97% of flights involved aircraft with RNAV-5 potential.

Number of flights per flight level

6.4.20. The information collected on the Oceanico FIR shows that almost all flights are conducted in RVSM airspace.

6.5. Colombia

Bogota/Barranquilla FIR (Appendix O)

Number of flights per city pair

6.5.1. In the Bogota/Barranquilla FIR, 356 city pairs involved in the provision of ATS were identified, 186 (52%) of which account for 80% of air traffic movement, showing a relative dispersion of flights. In this case, airspace planning should give priority to flows with the largest air traffic volume. A graph showing the main city pairs appears in the section corresponding to the Bogotá/Barranquilla FIR.

Number of flights on each ATS route

6.5.2. Information obtained from the AIP of Colombia revealed the existence of 70 ATS routes in the upper airspace of the Bogota/Barranquilla FIR, including 8 routes (UA322, UA565, UA566, UB690, UG448, UM656, UM778 and UR505) with very short segments in Colombian airspace (originating very close to the boundaries with adjacent FIRs) and that do not appear as routes with air traffic movement in the data recorded for Colombia. There is also one route (UL210) with the same characteristics, but which does not appear in the AIP of Colombia. A comparison between the data collected and the route network in the AIP reveals that there are 30 routes with less than 30 flights, including 12 routes (UB510, UW5, UW9, UW20, UW23, UW34, UW36, UW44, UQ106, UQ107, UQ111 and UQ113) with no air traffic movement (zero flights). However, given the omnidirectional air traffic flow in Colombian airspace, and its peculiarity of bordering on the CAR Region, a more in-depth analysis would be required to establish the possibility of eliminating, consolidating, and/or realigning the aforementioned routes.

City pairs serviced by each ATS route

6.5.3. The Bogota/Barranquilla FIR is strategically located, and is used by the SCEL/SPIM-KMIA; SPIM/SKBO-KJFK traffic flows, including the intermediate cities, as well as by traffic between SVMI/SKBO-MPTO, Central America, Mexico and Los Angeles. It is a transition FIR between the CAR and SAM Regions, with an omnidirectional air traffic flow, which adds complexity to Colombian airspace. Consequently, distribution is more or less uniform in the ATS routes of the Bogota/Barranquilla FIR. Given the amount of information available, only a few examples are shown in the section corresponding to the Bogota/Barranquilla FIR.

Number of fights by aircraft type/operator

6.5.4. The analysis of aircraft types/operators in the Bogota/Barranquilla FIR showed that 75% to 85% of flights involved aircraft with RNAV-5 potential. However, the information available in the database on navigation capabilities does not permit a final conclusion, due to lack of data on the aircraft operator. A graph showing the main aircraft operators/types appears in the section corresponding to the Bogota/Barranquilla FIR.

Number of flights per flight level

6.5.5. The information collected on the Bogota/Barranquilla FIR shows that about 95% of flights are conducted in RVSM airspace.

6.6. **Ecuador**

Guayaquil FIR (Appendix P)

Number of flights per city pair

6.6.1. In the Guayaquil FIR, 272 city pairs involved in the provision of ATS were identified, 103 (38%) of which account for 50% of air traffic movement, showing a relative dispersion of flights. In this case, airspace planning should give priority to flows with the largest air traffic volume. A graph showing the main city pairs appears in the section corresponding to the Lima FIR.

Number of flights on each ATS route

6.6.2. Information obtained from the AIP of Colombia revealed the existence of 29 ATS routes in the upper airspace of the Guayaquil FIR. A comparison between the data collected and the route network in the AIP shows that there are 2 routes (UW9 and UW23G) with no air traffic movement (zero flights), as well as 33 routes and route combinations with less than 30 flights, all of which account for only 3% of the air traffic movement analysed. However, given the omnidirectional air traffic flow in the Guayaquil FIR, and its peculiarity of bordering on the CAR Region, a more in-depth analysis would be required to establish the possibility of eliminating, consolidating, and/or realigning the aforementioned routes.

City pairs serviced by each ATS route

6.6.3. The Guayaquil FIR is used by the SCEL/SPIM-KMIA; SCEL/SPIM- MMMX/KLAX; SVMI/SKBO-SEGU/SEQU traffic flows, including the intermediate cities. It is a transition FIR between the SAM Region and Central America, with an omnidirectional air traffic flow, which adds complexity to the Guayaquil FIR airspace. Consequently,

distribution is more or less uniform in the ATS routes. Given the amount of information available, only a few examples are shown in the section corresponding to the Guayaquil FIR.

Number of flights by aircraft type/operator

6.6.4. The analysis of aircraft types/operators in the Guayaquil FIR revealed that 75% to 85% of flights involved aircraft with RNAV-5 potential. However, the information available in the database on navigation capabilities does not permit a final conclusion, due to lack of information on the aircraft operator.

Number of flights per flight level

6.6.5. The information collected on the Guayaquil FIR has not permitted a proper analysis, due to the fact that most of the data is geared to another type of analysis (RVSM), changes in flight level when entering and exiting the FIR, and the large amount of ascending and descending flights in the Guayaquil and Quito TMAs.

6.7. **Guyana**

Georgetown FIR (Appendix Q)

Number of flights per city pair

6.7.1. The analysis of the city pairs serviced in the Georgetown FIR showed that 54 city pairs were involved in the provision of ATS, 25 of which accounted for 95% of flights. Thus, there is a concentration of flights in the Georgetown FIR.

Number of flights on each ATS route

6.7.2. Information obtained from DOD charts revealed the existence of 9 ATS routes in the upper airspace of the Georgetown FIR. A comparison between the data collected and the route network in the AIP has shown that there are 4 routes with few flights (less than 30), including 2 routes with no air traffic movement (zero flights). Taking into account the criterion whereby a movement of less than 30 warrants the elimination of the route, a total of 4 international routes could be eliminated.

City pairs serviced by each ATS route

6.7.3. No ATS routes in which the amount and characteristics of the air traffic flow could lead to the implementation of "by-pass" routes were identified. Given the amount of information available, only 1 example was inserted in the section corresponding to the Georgetown FIR.

Number of flights by aircraft type/operator

6.7.4. The analysis of aircraft types/operators in the Georgetown FIR showed that 83.71% of flights involved aircraft with RNAV-5 potential, given the prevalence of commercial flights that use state-of-the-art aircraft. Lack of data on the rest of the fleet has prevented a more in-depth analysis of the remaining 16.21%.

Number of flights per flight level

6.7.5. The information collected on the Georgetown FIR has shown that 100% of flights are conducted in RVSM airspace.

6.8. **French Guiana**

Rochambeau FIR (Appendix R)

Number of flights per city pair

6.8.1. The analysis of city pairs serviced in the Rochambeau FIR revealed that 108 city pairs were involved in the provision of ATS, 61 of which accounted for 95% of flights. This shows a dispersion of flights, taking into account the relationship between the number of flights and the size of the Rochambeau FIR.

Number of flights on each ATS route

6.8.2. Information obtained from DOD charts revealed the existence of 9 ATS routes in the upper airspace of the Rochambeau FIR. A comparison between the data collected and the route network in the AIP shows that there are 4 routes with 30 flights, including 1 route with zero flights. Taking into account the criterion whereby a movement of less than 30 warrants the elimination of the route, a total of 4 international routes could be eliminated.

City pairs serviced by each ATS route

6.8.3. No ATS routes in which the amount and characteristics of the air traffic flow could lead to the implementation of "by-pass" routes were identified. Given the amount of information available, only 1 example was inserted in the section corresponding to the Rochambeau FIR.

Number of flights by aircraft type/operator

6.8.4. The analysis of aircraft type/operator in the Rochambeau FIR revealed that 89.14% of flights involved aircraft with RNAV-5 potential, given the prevalence of commercial flights that use state-of-the-art aircraft. Lack of data on the rest of the fleet has prevented a more in-depth analysis of the remaining 10.86%.

Number of flights per flight level

6.2.1 The information collected on the Rochambeau FIR has shown that 99.48% of flights are conducted in the RVSM airspace.

6.9. **Panama**

Panama FIR (Appendix S)

Number of flights per city pair

6.9.1. In the Panama FIR, 474 city pairs involved in ATS provision were identified, 135 (28%) of which account for 50% of air traffic movement, showing a relative dispersion of flights. In this case, airspace planning should give priority to flows with the largest air traffic volume. A graph showing the main city pairs appears in the section corresponding to the Panama FIR.

Number of flights on each ATS route

6.9.2. Information obtained from the AIP of Panama revealed the existence of 37 ATS routes in the upper airspace of the Panama FIR. A comparison between the data collected and the route network in the AIP showed that there are 31 routes and route combinations that account for 90% of air traffic movement, as well as 5 routes (UR505, UV11, UV16, UV18, UV20) with no air traffic movement (zero flights) and 116 routes and route combinations with less than 30 flights, all of which account for only 4.3% of the air traffic movement analysed. This, added to the complexity of the Panama FIR airspace, with omnidirectional air traffic flow, and its peculiarity of bordering on the CAR Region, would require a more in-depth analysis to establish the possibility of eliminating, consolidating, and/or realigning the cited routes.

City pairs serviced by each ATS route

6.9.3. The Panama FIR is strategically located, reason why it is used mainly by the SCEL/SPIM-KMIA and SVMI/SKBO-MPTO traffic flows, including the intermediate cities, as well as by traffic between SVMI/SKBO-MPTO, Central America and the Caribbean. It is a transition FIR between the CAR and SAM Regions, with an omnidirectional air traffic flow, which adds complexity to the Panama FIR. Given the amount of information available, only a few examples are shown in the section corresponding to the Panama FIR.

Number of flights by aircraft type/operator

6.9.4. The analysis of aircraft types/operators in the Panama FIR showed that between 75% and 85% of flights involved aircraft with RNAV-5 potential. However, the information available in the database on navigation capabilities does not permit a final conclusion, due to lack of data on the aircraft operator.

Number of flights per flight level

6.9.5. The information collected on the Panama FIR has revealed that about 95% of flights are conducted in RVSM airspace.

6.10. **Paraguay**

Asuncion FIR (Appendix T)

Number of flights per city pair

6.10.1. The analysis of the city pairs serviced in the Asuncion FIR revealed that 126 city pairs were involved in the provision of ATS, 71 of which account for 95% of flights. This shows some degree of flight dispersion in the Asuncion FIR in a relatively small airspace, which would require more attention to flows with greater traffic. A graph showing the main city pairs of the Asuncion FIR is contained in the section corresponding to the Asuncion FIR.

Number of flights on each ATS route

6.10.2. Information obtained from DOD charts revealed the existence of 16 ATS routes in the upper airspace of the Asuncion FIR. A comparison between the data collected and the route network in the AIP reveals that there are 6 routes with less than 30 flights. Taking into account the criterion whereby a movement of less than 30 warrants the elimination of the route, a total of 6 international routes could be eliminated.

City pairs serviced by each ATS route

6.10.3. No ATS routes in which the amount and characteristics of air traffic flow could lead to the implementation of "by-pass" routes were identified. Given the amount of information available, only 1 example was inserted in Appendix xx.

Number of flights by aircraft type/operator

6.10.4. The analysis of aircraft types/operators in the Asuncion FIR revealed that 89.19% of flights involved aircraft with RNAV-5 potential, given the prevalence of commercial flights that use state-of-the-art aircraft, and some general aviation aircraft registered in Argentina. Lack of data on the rest of the fleet has prevented a more in-depth analysis of the remaining 16.33%. A graph containing the main aircraft operators/types is shown in the section corresponding to the Asuncion FIR.

Number of flights per flight level

6.10.5. The information collected on the Asuncion FIR has shown that 98.68% of flights are conducted in RVSM airspace. There is no information about flights on FL 270.

6.11. **Peru**

Lima FIR (Appendix U)

Number of flights per city pair

6.11.1. In the Lima FIR, 324 city pairs involved in the provision of ATS provision were identified, 161 (50%) of which accounted for 76% of air traffic movement, revealing a relative flight dispersion. In this case, airspace planning should give priority to flows with the largest air traffic volume. A graph showing the main city pairs appears in the section corresponding to the Lima FIR.

Number of flights on each ATS route

6.11.2. Information obtained from the AIP of Peru revealed the existence of 47 ATS routes in the upper airspace of the Lima FIR. A comparison between the data collected and the route network in the AIP showed that 29 (62%) routes and route combinations account for 90% of air traffic movement; and that 131 routes and route combinations with less than 30 flights, all of which account for only 6.6% of the air traffic movement analysed, suggesting that the airspace structure and configuration would require a more in-depth analysis to establish the possibility of eliminating and/or realigning the cited routes.

City pairs serviced by each ATS route

6.11.3. The Lima FIR is mainly used by traffic flows SCEL/SPIM-KMIA, SAEZ/SPIM; SBRJ/SBGR-SPIM, SPIM/SKBO-KJFK, including intermediate cities. Nine routes (19%) alone account for 50% of air traffic movement on the main traffic flows of the Lima FIR. Given the amount of information available, only a few examples are shown in the section corresponding to the Lima FIR.

Number of flights by aircraft type/operator

6.11.4. The analysis of aircraft types/operators in the Lima FIR revealed that 85% to 95% of flights involved aircraft with RNAV-5 potential. However, the information available

in the database on navigation capabilities does not permit a final conclusion, due to lack of data on the aircraft operator. A graph containing the main aircraft operators/types is shown in the section corresponding to the Lima FIR.

Number of flights per flight level

6.11.5. The information collected on the Lima FIR shows that about 90% of flights are conducted in RVSM airspace.

Domestic and international routes that should be eliminated according to their utilisation

6.11.6. The elimination of domestic and international routes that can be considered of low utilisation would lead to a reduction of airspace complexity, since it would permit the redesign of airspace structure and the optimisation of air traffic routing in the SAM FIR.

6.11.7. ATS routes with less than 30 monthly flights, which is an average of less than one daily flight, should be eliminated, unless a specific operational circumstance recommends that the published route be kept. Domestic and international routes with less than 30 monthly flights are shown in **Appendix U.**

6.11.8. The use of upper control areas (UTAs) beyond ATS routes in the SAM FIR would permit air traffic routing outside of an ATS route, without the aircraft leaving controlled airspace and, thus, without losing ATC benefits. Consequently, flights conducted in low-traffic routes could benefit from greater airspace flexibility, since they could go directly from one point to another.

6.11.9. Likewise, in the most significant air traffic flows, it would be advisable to apply the preferential route concept, where a greater airspace efficiency would be ensured through the use of specific routes for air traffic routing, thus providing an adequate flow of aircraft between ATC units. Standard instrument arrivals (STARs) and standard instrument departures (SIDs) should also be included in the preferential routes of the main TMAs, with a view to achieving an appropriate interface between TMA and en-route flight phases.

6.11.10. An analysis of items 3.1 to 3.6 points to the convenience of checking the possibility of eliminating the international routes contained in Appendix xx. Furthermore, SAM States should assess the feasibility of eliminating domestic flights with low air traffic movement, as stipulated in this study.

Proposal of an exclusionary RNAV-5 airspace volume

6.11.11. In general, the current status of development of the database on navigation capabilities of the SAM fleet has not permitted a comprehensive analysis of a possible exclusionary RNAV-5 airspace volume. However, even in the absence of complete information, it may be concluded that at least 85% of en-route operations in most FIRs involve aircraft with RNAV-5 potential, given the use of state-of-the-art aircraft or as inferred from the information obtained in the database on navigation capabilities.

6.11.12. The only exceptions are the Maiquetía and Georgetown FIRs, where lack of information about a significant part of the aircraft fleet does not permit reaching a conclusion about the possibility that at least 85% of flights involve aircraft with RNAV-5 potential.

6.11.13. Likewise, there are some doubts about a significant portion of flights in the Ezeiza and Resistencia FIRs, while there is information in the database indicating that 85% could be approved for RNAV-5 operations. It is important to highlight that there is a

significantly low number of aircraft that will not be approved for RNAV-5, and on which information is already available. There is aircraft information that still needs to be obtained from SAM States, and the analysis needs to be supplemented with the IATA database in order to obtain information on the fleets from other regions.

"Conventional" routes that should be eliminated or replaced by RNAV routes due to lack of ground radio aid coverage

6.11.14. There are "conventional" routes in the SAM Region that should be eliminated or replaced by RNAV routes due to lack of ground radio aid coverage. The following table gives some examples.

Route	Segment	Distance between radio aids
UA312	Santarém / Timehri	570 NM
UA315	Manaus / Charallave	873 NM
UA316	Manaus / Viru-Viru	892 NM
UA317	Alta Floresta / Tefé	644 NM
UB554	Cuiabá / Rio Branco	782 NM
UG449	Belém / Zandery	573 NM
UR559	La Paz / Iquitos	733 NM
UR640	Manaus / Puerto Ayacucho	697 NM

RNAV routes that should be realigned, based on entries and exits to/from the main TMAs in the SAM Region

6.11.15. According to the information provided to the SAM/IG/4 meeting, SAM States will not make changes in the main TMAs following PBN application, which might require modifications to the SAM route network. The only exception could be the Brasilia, Recife, Rio de Janeiro, and Sao Paulo TMAs. The Brazilian Administration will provide the respective information by March 2010.

6.12. **Suriname**

Paramaribo FIR (Appendix V)

Number of flights per city pair

6.12.1. The analysis of city pairs serviced in the Paramaribo FIR revealed that 106 city pairs were involved in the provision of ATS, 51 of which account for 95% of flights. This shows some degree of flight dispersion in the Paramaribo FIR that would require that more attention be paid to flows with greater traffic.

Number of flights on each ATS route

6.12.2. Information obtained from DOD charts revealed the existence of 8 ATS routes in the upper airspace of the Paramaribo FIR. A comparison between the data collected and the route network in the AIP shows that there is 1 route (UB680) with zero flights. It is important to highlight that route UB680 appears in the DOD chart but not in the AIP of Brazil or in the aeronautical charts published by the Brazilian Administration. Taking into account the criterion whereby a movement of less than 30 warrants the elimination of the route, that international route could be eliminated. A total of 63 flights were conducted outside of the ATS routes, between EHAM and SMJP. This could point to the need of implementing an

ATS route or reclassifying the airspace in the Paramaribo FIR in order to provide air traffic control service to these flights.

City pairs serviced by each ATS route

6.12.3. No ATS routes in which the amount and characteristics of air traffic flow could lead to the implementation of "by-pass" routes were identified. Given the amount of information available, only 1 example was inserted in **Appendix V.**

Number of flights by aircraft type/operator

6.12.4. The analysis of aircraft types/operators in the Paramaribo FIR revealed that 85.99% of flights involved aircraft with RNAV-5 potential, given the prevalence of commercial flights using state-of-the-art aircraft. Lack of data on the rest of the fleet has prevented a more in-depth analysis of the remaining 14.01%, especially 6.96% of flights conducted by the B733 of Surinam Airways. A graph containing the main aircraft operators/types is shown in the section corresponding to the Paramaribo FIR.

Number of flights per flight level

6.12.5. The information collected on the Paramaribo FIR shows that about 96.11% of flights are conducted in RVSM airspace. Atypically, FL 260, 270 and 280 are used more than FL 290.

6.13. **Uruguay**

Montevideo FIR (Appendix W)

Number of flights per city pair

6.13.1. An analysis of city pairs serviced in the Montevideo FIR revealed that 143 city pairs were involved in the provision of ATS, 57 of which account for 95% of flights. This shows some degree of flight dispersion in the Montevideo FIR that would require more attention to flows with greater traffic.

Number of flights on each ATS route

6.13.2. Information obtained from the AIP of Uruguay revealed the existence of 18 ATS routes in the upper airspace of the Montevideo FIR. A comparison between the data collected and the route network in the AIP showed that there are 5 routes with less than 30 flights. Taking into account the criterion whereby a movement of less than 30 warrants the elimination of the route, these 5 international routes could be eliminated.

City pairs serviced by each ATS route

6.13.3. There is significant traffic in ATS routes UA308 and UN741. A more in- depth analysis of these routes could lead to the implementation of parallel or "by-pass" routes. It should also be noted that any minor change resulting in a reduction of the distance flown on these routes could lead to significant fuel savings, and, thus, a reduction in greenhouse gas emissions. Given the amount of information available, only 1 example was inserted in the section corresponding to the Montevideo FIR.

Number of flights by aircraft type/operator

6.13.4. The analysis of aircraft types/operators in the Montevideo FIR revealed that 87.08% of flights involved aircraft with RNAV-5 potential, given the prevalence of commercial flights using state-of-the-art aircraft and a few general aviation aircraft registered in Argentina. Lack of data on the rest of the fleet has prevented a more in-depth analysis of the remaining 22.92%, especially 7.49% of flights conducted by the B735 of Aerolíneas Argentinas. A graph containing the main aircraft operators/types is shown in the section corresponding to the Montevideo FIR.

Number of flights per flight level

6.13.5. The information collected on the Montevideo FIR has not permitted an appropriate analysis, since it mostly contains random numbers instead of flight levels.

6.14. **Venezuela**

Maiquetía FIR (Appendix X)

Number of flights per city pair

6.14.1. An analysis of city pairs serviced in the Maiquetía FIR revealed that 700 city pairs were involved in the provision of ATS, 295 of which account for 95% of flights. This shows significant flight dispersion in the Maiquetía FIR that would require that more attention be paid to flows with greater traffic. A graph showing the main city pairs is contained in the section corresponding to the Maiquetía FIR.

Number of flights on each ATS route

6.14.2. Information obtained from the AIP of Venezuela revealed the existence of 48 ATS routes in the upper airspace of the Maiquetía FIR. A comparison between the data collected and the route network in the AIP showed that there are 16 routes with less than 30 flights, 9 of which have zero flights. Taking into account the criterion whereby a movement of less than 30 warrants the elimination of the route, 10 international routes and 6 domestic routes could be eliminated.

City pairs serviced by each ATS route

6.14.3. There is significant traffic in ATS routes UA315, UA550, UA552, UG446 and UL 795. A more in-depth analysis of these routes could lead to the implementation of "by-pass" routes. It should also be noted that any minor change resulting in a reduction of the distance flown on these routes could lead to significant fuel savings, and, thus, a reduction of greenhouse gas emissions. Given the amount of information available, only 1 example was inserted in the section corresponding to the Maiquetía FIR.

Number of flights by aircraft type/operator

6.14.4.
6.2.2 The analysis of aircraft types/operators in the Maiquetía FIR revealed that 55.51% of flights involved aircraft with RNAV-5 potential, given the prevalence of commercial flights using state-of-the-art aircraft. Lack of data on the rest of the fleet has prevented a more in-depth analysis of the remaining 44.49%, especially those from the Venezuelan airlines (Acerca Airlines, Aeropostal and Conviasa). A graph containing the main aircraft operators/types is shown in the section corresponding to the Maiquetía FIR.

Number of flights per flight level

6.14.5. In a completely atypical manner, there is a significant prevalence of FL 250 in the Maiquetía FIR (53.69%). Only 44,33% of flights are conducted in RVSM airspace. A minimum utilisation of FL300 (0.9%) is observed.

7. Interface with the CAR route network

7.1. In version 1.0 of the Route Network, the interface with the CAR route network shall take place through the reporting points that exist along the boundary between the two Regions, except for flights to the area of Miami and New York, in which the use of WATRS airspace gateways can be analysed in coordination with the ICAO NACC Office, the States involved, and the FAA.

7.2. Currently, the points that could be used are the following:

a) Paramaribo/Piarco FIR
   - TRAPP

b) Georgetown/Piarco FIR
   - KAISO
   - EGEMA
   - DALGA
   - KORTO
   - MINDA

c) Maiquetía/Piarco FIR
   - PARIA
   - MEGIR
   - DAREK
   - ALDIT
   - ITEGO
   - BOGSI
   - KIKER
   - MILOK
   - ARMUR
   - ILKIT
   - KABON
   - BONAX
   - AVELO
   - REBIS
   - ALCOT
   - NOREX
   - GILGA

8. **Draft amendment to the CAR/SAM ANP**

8.1. The draft amendment to the CAR/SAM ANP shall contemplate the elimination of the international routes that appear in **Appendix Y.** Likewise, the following routes should be included in said draft, taking into account that they will be implemented in 2010 or are left pending for a more detailed analysis regarding their implementation:

ROUTE	REMARKS
~~UL 306~~	~~Pending coordination among BRAZIL, FRENCH GUIANA and SURINAME.~~
UM782 UL201 UA317	Brazil will report any modifications resulting from the realignment of these routes.
Santiago / Sao Paulo	Realignment of existing routes, with a view to increasing operational efficiency.
UM530	Implementation of route RBC VOR (Amazónica FIR/ BRS VOR (Brasilia FIR) – proposal by Brazil
UM662	Implementation of the Guayaquil / Madrid route
UM661	Carrasco VOR (Montevideo FIR) / ERETU reporting point (Amazónica FIR) – Implementation on 06/05/2010
UM532	Buenos Aires / Brasilia – Implementation on 06/05/2010
Rosario/Porto Alegre	Implementation
Montevideo/Asunción	Realignment of existing routes
Córdoba/Porto Alegre	Implementation
UM403	Asunción / Brasilia – Implementation on 06/05/2010
UM784	LIMPO reporting point (Amazónica FIR) to APARE reporting point (La Paz FIR) – Implementation on 06/05/2010
UA309	Elimination – Montevideo/Porto Alegre – target date 06/05/2010
UB695	Elimination – Asunción/ URP VOR (Curitiba FIR) – target date 06/05/2010

9. **Opportunities for improving the SAM ATS Route Network**

9.1. The analysis of the available statistical data has permitted the identification of some routes/city pairs that would merit a more in-depth analysis, taking into account the significant air traffic movement involved. In this respect, opportunities for improvement should be evaluated, taking into account the following aspects:

a) Application of the flexible use of airspace concept

b) Use of continuous descent approaches (CDA)

c) Application of unidirectional routes with lateral separation

d) In this respect, an in-depth analysis of the following ATS routes is recommended:

FIR	ATS ROUTE
BRASILIA FIR	UA312
	UA317
	UN741
	UN866
	UW10
	UW12
	UW13
	UW2
	UW58
CURITIBA FIR	UA310
	UA312
	UM788
	UN857
	UW19
	~~UW24~~
	~~UW25~~
	UW50
	UW6
EZEIZA FIR	UA305
	UA306
	~~UL550~~
MAIQUETIA FIR	UA315
	~~UA550~~
	UG446
	~~UL795~~
MONTEVIDEO FIR	UA308
	~~UA314~~
	~~UN741~~
RECIFE FIR	UN866
	~~UN873~~
	UW10
	~~UW33~~
	UW50
	UW58
	~~UZ10~~

9.2. Some examples of the use of some concepts are described below, with a view to presenting some specific opportunities for improving the existing routes.

ATS route UA312

9.3. Airway UA312 is a unidirectional southeast-northwest route and, in the Brasilia and Curitiba FIRs, it has significant air traffic movement, about 1,100 monthly flights, which is an average of 35 daily flights. Of this total, about 1,000 flights are between the Rio de Janeiro and Brasilia TMAs. The remaining 100 flights are between the Rio de Janeiro international airport and the United States. The implementation of a route parallel to airway UA312, between the latter and UA317 could facilitate the use of continuous descent approaches (CDA) between the Rio de Janeiro (international and Santos Dumont) airports and the Brasilia airport.

ATS route UA317

9.4. Airway UA317 is a unidirectional northwest-southeast route that, in the Brasilia and Curitiba FIRs, has significant air traffic movement, about 1,200 monthly flights, which is an average of 39 daily flights. Of this total, about 1,000 flights are conducted between the Brasilia and Rio de Janeiro TMAs. The remaining 100 flights are between the United States and the Rio de Janeiro international airport. The implementation of the parallel route mentioned in paragraph 7.3.1 could be bidirectional and would also be used for the arrival of flights from the United States to the Rio de Janeiro TMA, avoiding any mixing with domestic flights.

ATS route UN741

9.5. ATS route UN741 is a long-range, unidirectional route that links the EUR/SAM Corridor with the Ezeiza TMA, comprising the Atlántico, Recife, Brasilia, Curitiba, Montevideo and Ezeiza FIRs. In the Montevideo and Ezeiza FIRs, the route has significant air traffic movement, taking into account that traffic between Europe and the SP TMA bound for Buenos Aires uses this route. There is no record of significant traffic in the Curitiba FIR because most of the traffic between the SP TMA and Buenos Aires uses route UM788. In the Brasilia FIR, route UN741 once again supports significant traffic from the traffic between Europe and the SP TMA, which mixes with the traffic between Europe and Buenos Aires. In this respect, the use of route UM654 for routing traffic between Europe and Buenos Aires should be analysed, while route UN741 would be basically used for flights between Europe and Sao Paulo. Similarly, there would be a better distribution of air traffic flow in the Ezeiza and Montevideo FIR.

ATS route UN866

9.6. ATS route UN866 is a long-range, unidirectional route that links the Sao Paulo TMA with the EUR/SAM Corridor, comprising the Brasilia, Recife and Atlántico FIRs. The route has significant movement, taking into account that it includes flights from Buenos Aires, Montevideo and Sao Paulo International to Europe. The implementation of a "by- pass" route between Buenos Aires/Montevideo and Europe could clear that route in the Brasilia and Recife FIRs. The implementation of route UM661, between Montevideo and reporting point ERETU, foreseen for 6 May 2010, will meet the need for a better distribution of traffic between Buenos Aires/Montevideo/Sao Paulo and Europe.

ATS route UW10

9.7. ATS route UW10 crosses a good portion of the Brazilian territory, from Cruzeiro do Sul (Acre) to Recife, passing by Porto Velho, Cuiabá and Brasilia. Since this route was implemented many years ago, some problems can be identified. The (two-way) segment between Cuiabá and Porto Velho, which has a reasonable air traffic volume (81 flights), unnecessarily crosses the Vilhena VOR, considering that the traffic sample produced only 2 flights between Vilhena and Brasilia and 1 flight between Cuiabá and Vilhena. It can also be noted that aircraft flying between Porto Velho and Cuiabá have RNAV-5 capability, except for the DC-87s of "BET" airlines, on which there is no information in the navigation database. There is intense air traffic movement in the segment between SBRF and SBBR, (836 flights in a 1-month period), taking into account that most of the traffic is between SBRF/SBBR/SBRF, which also includes traffic from a significant part of the Brazilian northeast (SBMO, SBJP, SBNT) to SBBR. Consequently, it would be advisable to analyse the need/feasibility of implementing unidirectional routes between the Brasilia and Recife TMAs.

ATS route UW12

9.8. ATS route UW12 has significant air traffic movement involving some important city pairs, such as: SBCF/SBBR, SBVT/SBCF, SBCF/SBVT, SBVT/SBBR and SBBR/SBVT. Regarding the segment Brasilia TMA/Vitoria TMA, there is a possibility of reducing the distance flown with the implementation of a direct route between the two TMAs, taking into account the number of monthly flights (189). However, the implementation of said route would represent a significant number of north/south/north routes.

ATS route UW13

9.9. ATS route UW13 is the most frequently used in the Brasilia FIR, involving several important city pairs, such as: SBGR/SBSV, SBSP/SBCF, SBGR/SBRF, SBGR/SBCF, SBGR/SBNT, SBKP/SBSV, SBSP/SBSV, SBGR/SBMO. It may be noted that 1,155 flights were conducted between the Sao Paulo and Belo Horizonte TMAs (unidirectional route). The other flights are mostly between the Sao Paulo TMA and the Brazilian cities of the northeast (Salvador, Recife, Natal). Such flights should use another ATS route, leaving route UW13 only for flights between the Sao Paulo and Belo Horizonte TMAs. Furthermore, a new route between the Sao Paulo and Salvador TMAs would save about 7 NM per flight, a savings of about 18,000 NM in one month of operations. For the implementation of the new route, it will be necessary to apply the flexible use of airspace concept, taking into account that the route will have to cross special use airspaces between the Sao Paulo and Rio de Janeiro TMAs.

ATS route UW2

9.10. ATS route UW2 is one of the most frequently used in the Brasilia FIR, due to traffic between the Sao Paulo and Brasilia TMAs (1,477 flights). There is significant traffic from the Sao Paulo TMA to the United States (about 320 flights), mainly through routes UL776, UZ24 and UZ23. In this case, the implementation of a new ATS route or the realignment of route UL304 would turn ATS route UW2 into a specialised route between the Sao Paulo and Brasilia TMAs.

ATS route UW58

9.11. ATS route UW 58 is the most frequently used route in the SAM Region, with a total of 6,347 flights in the Recife FIR and 3,583 in the Brasilia FIR. The reason for having more flights in the Recife FIR is that, in addition to servicing flights between the two FIRs, the route is used for flights from the main cities in the northeast of Brazil (Salvador, Recife, Natal). Although ATS route UW58 is practically aligned between the SP, TMA BH, TMA SV TMAs and the RF TMA (which are the main generators of air traffic for this route), the application of parallel or by-pass routes should be assessed, in order to permit the specialisation of the route for arrivals from the BH TMA to the SP TMA, and also from the SV TMA to the BH TMA.

ATS route UA310

9.12. Of the total 1,065 flights that used ATS route UA310, almost 1,000 flights were between the SP TMA and the CT TMA. Such air traffic movement would warrant the use of said route in a specialised manner for flights between the two TMAs. However, the route is used for other city pairs, like, for instance, SBKP/SBPA (182 flights), SBGL/SBFI (88 flights), and from other Brazilian and European airports to SAEZ and SUMU (163 flights). There are other ATS route options for flights not involving the Sao Paulo and Curitiba TMAs that could be used under the preferential route concept.

ATS route UM788

9.13. Of the total 1,541 flights that used ATS route UM788, 1,434 were between the Sao Paulo TMA (SBGR and SBSP) and the Porto Alegre TMA (SBPA and SBCX), and between the Guarulhos airport (SBGR) and the Ezeiza airport (SAEZ). This is a typical by- pass route, since it avoids overflying the Curitiba TMA and provides the necessary conditions for the use of specialised departure routes from the Sao Paulo TMA to the south. However, route UM788 favours the flow with less air traffic movement (Guarulhos-Ezeiza/427 flights), in detriment of the flow with more traffic (Sao Paulo TMA to the Porto Alegre TMA/ 1,007 flights), taking into account that aircraft are forced to fly on route UW24, starting on reporting point NAFIL. In this respect, a possible realignment of the route should be assessed in order to release the SP TMA arrival sector, with a view to reducing the distance flown between the SP and PA TMAs.

ATS route UN857

9.14. ATS route UN857 is a long-range, unidirectional route that links the Ezeiza TMA to the EUR/SAM Corridor, involving the Ezeiza, Montevideo, Curitiba, Brasilia, Recife and Atlántico FIRs. The route has significant movement, taking into account that it involves flights from Buenos Aires, Montevideo and Sao Paulo International to Europe. The implementation of a by-pass route between Buenos Aires/Montevideo and Europe could clear this route in the Montevideo, Curitiba, Brasilia and Recife FIRs, taking into account that route UN857 is more frequently used for the following city pairs: Rio de Janeiro/Recife, Buenos Aires/Rio de Janeiro and Buenos Aires/Porto Alegre. Route UN857 is not used, as would have been expected, to link the Ezeiza TMA to the EUR/SAM Corridor, except in the Montevideo FIR. Most of the traffic leaving the Ezeiza TMA to Europe uses route UM671, which was initially developed to service traffic between the Ezeiza and Sao Paulo TMAs. The combination normally used for flight continuity, UM671/UW25/UN866 or UW671/UW25/UW13/UW58, does not ensure a proper interface for overflights in the Sao Paulo TMA.

9.15. It is important to highlight that there is no information about flights on this route in the Ezeiza FIR, probably because aircraft are still in the ascent/descent phase and do not reach FL250 before the boundary with the Montevideo FIR. The implementation of route UM661 between Montevideo and reporting point ERETU, foreseen for 6 May 2010, will meet the need for a better distribution of traffic between Buenos Aires/Montevideo/Sao Paulo and Europe. It would be interesting to obtain information from the users as to their plans to use this route.

ATS route UW19

9.16. ATS route UW19 has significant traffic (1,212 flights in a one-month period) involving flights from different city pairs. The largest number of movements takes place between Rio de Janeiro (SBGL) and Porto Alegre (SBPA), taking into account that all of the 228 flights carried out between these two cities used route UA314 up to the FLN VOR and then diverted from that VOR to Porto Alegre, using ATS route UW19, increasing the distance flown by 7 NM. It is important to highlight that route UA314 is a two-way route and there would be no need to divert using route UW19. Furthermore, in the chapter on preferential routes in the Brazilian AIP, there is no guidance on the use of route UW19. However, the use of route UW19 avoids a potential conflict between arriving and departing aircraft between SBGL/SBPA and SBPA/SBGL. It would be advisable to define the periods in which such diversion is really necessary, in order to avoid increasing the distance flown unnecessarily at times of low air traffic.

ATS route UW50

9.17. ATS route UW50 has significant air traffic movement (3,519 flights in a one- month period), taking into account that it serves flights between important Brazilian airports, mainly between the Rio de Janeiro and Sao Paulo TMAs. However, there is an atypical use of this route for flights between airports in the northeast of Brazil (SBRF, SBSV, SBMO, SBJP) to the Sao Paulo TMA, since this route is significantly longer than the one that should be used (UW58). Thus, while route UW50 should not be modified because it serves the city pairs involved, its use for flights from the airports in the northeast of Brazil, in addition to significantly increasing the distance flown, could cause traffic congestion in one of the routes linking two of the TMAs with the greatest air traffic movement in South America (Rio de Janeiro and Sao Paulo).

ATS route UW6

9.18. ATS route UW6 is a long-range route that crosses all of the Brazilian airspace, from Porto Alegre to Belém, thus servicing a large number of city pairs. Flights between the Porto Alegre and Brasilia TMAs use ATS route UW6, passing through the Curitiba TMA, which increases the distance flown between SBPA/SBBR. In the opposite direction, between SBBR and SBPA, use is made of ATS route UZ5, which is practically direct between the two TMAs. ATS route UZ5 is unidirectional between the Porto Alegre TMA and the BRU VOR, impeding its use in the SBPA/SBBR direction. The unidirectional use of this route in the aforementioned segment is probably due to the need to separate arriving and departing flows in the Porto Alegre TMA. However, the feasibility of increasing the bidirectional segment of ATS route UZ5 should be analysed, with a view to reducing the distance flown between SBPA and SBBR, as well as reducing traffic between the Porto Alegre and Curitiba TMAs.

ATS route UA305

9.19. Most of this route is located in Argentine airspace. According to statistical data collected in the Ezeiza FIR, there is a significant number of flights from SAEZ to SBGR (294 flights) that use ATS route UA305. This utilisation significantly increases the distance flown, taking into account that route UN857 provides a link with route UM671, which is practically a direct route between the Ezeiza and Sao Paulo TMAs. Data collected on the Curitiba FIR show that most flights between SAEZ and SBGR use ATS route UM671, which shows inconsistency in the data collected in the Ezeiza and Curitiba FIRs. Data collected in the Montevideo FIR confirm that traffic between SAEZ and SBGR uses route UN857/UA308 (routes with converging paths between the La Plata and Porto Alegre VORs). Likewise, air traffic routing between SAEZ and SBGR through ATS route UA305 is not advisable due to the increase of the distance flown.

ATS route UA306

9.20. ATS route UA306 is located in the Montevideo, Ezeiza and Santiago FIRs, and serves several city pairs, the most important of which, in terms of air traffic movement, is SAEZ/SCEL. Route UA306 uses the DOZ VOR (Mendoza) as radio navigation aid, unnecessarily increasing the distance flown between the two airports. One RNAV route could replace route UA306, thus reducing the distance flown if the conditions for overflying the Andes mountain range so permit.

ATS route UA315

9.21. ATS route UA315 has significant air traffic movement (688 flights), the centre of which is the Maiquetía airport. Most air traffic on this route takes place between the airports of Maiquetía and Miami (229 flights). The use of a "conventional" route in the Maiquetía FIR increases the distance flown, taking into account that the route goes from the MIQ VOR (Maiquetía) to the PJG VOR (Curacao). Replacement of route UA315 with an RNAV route could reduce ATS route UA315.

ATS route UG446

9.22. Route UG446 serves various city pairs, from North America to South America, primarily flights between KMIA and SVMI. As in the case of UA315, replacement of route UG446 with an RNAV route could reduce the distance flown between some airports in North America and South America, mainly between KMIA and SVMI.

ATS route UA308

9.23. ATS route UA 308 has significant air traffic movement (1,066 flights in a one-month period), serving a significant number of city pairs, including SAEZ/SBGR, SAEZ/SBGL, SAEZ/SBPA and between SAEZ and some cities in Europe. The implementation of a by-pass RNAV route could clear that route and the arrival sectors in Porto Alegre and Sao Paulo. The implementation of route UM 661 (Carrasco VOR/ ERETU) could be a partial solution to the problem. It would be interesting to look for a by-pass route between SAEZ and SBGL.

10. **Safety-related aspects**

10.1. As established in Annex 11, the implementation of version 1.0 of the SAM route network shall be preceded by an SMS-based safety assessment using a qualitative method. The implementation could also consider values that directly affect safety, such as passing frequency, with a view to reducing the theoretical values of the risk associated to the new ATS route structure.

11. **Reference documentation**

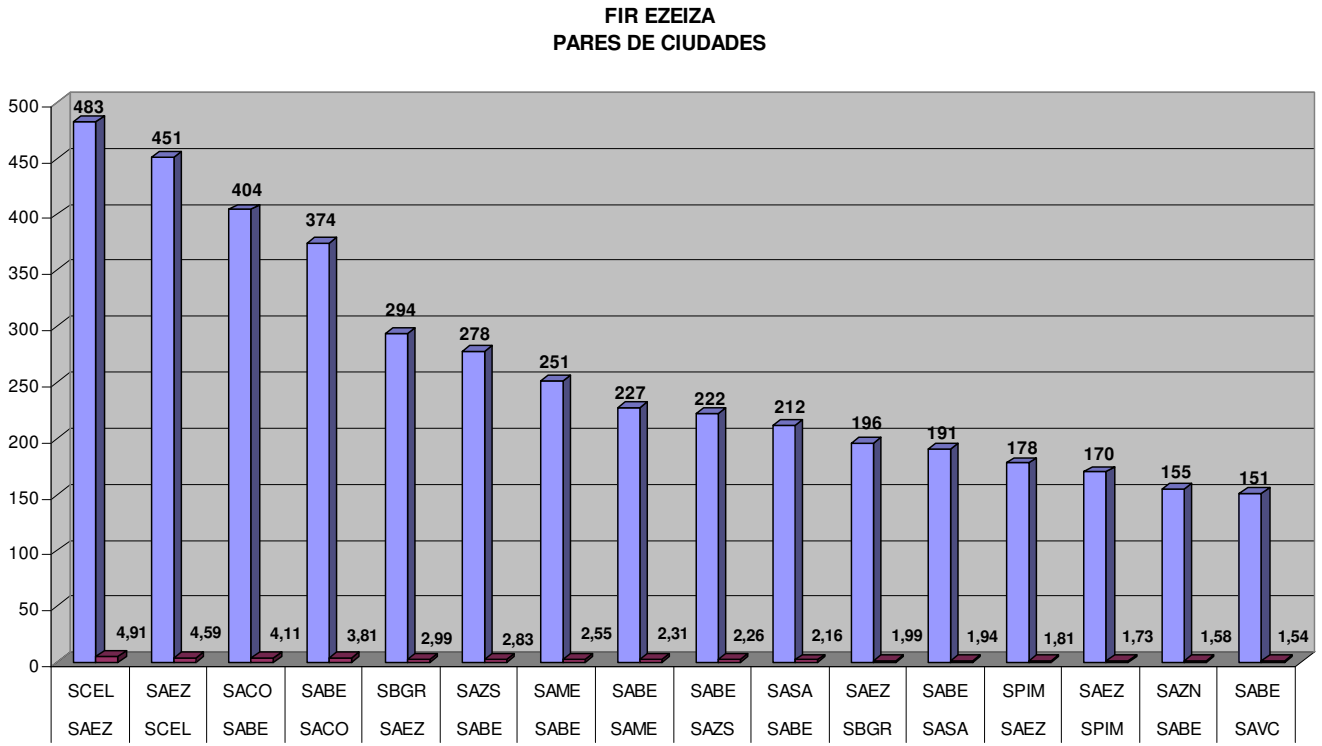
- Report of the SAM/IG/3 meeting (SAM Route Network Optimisation Programme)
- EUROCONTROL, Manual for Airspace Planning (ASM.ET1.ST03.4000.EAPM.02.02)
- CAR/SAM Air Navigation Plan

ARGENTINA

APPENDIX A

FIR Ezeiza

FIR EZEIZA PARES DE CIUDADES



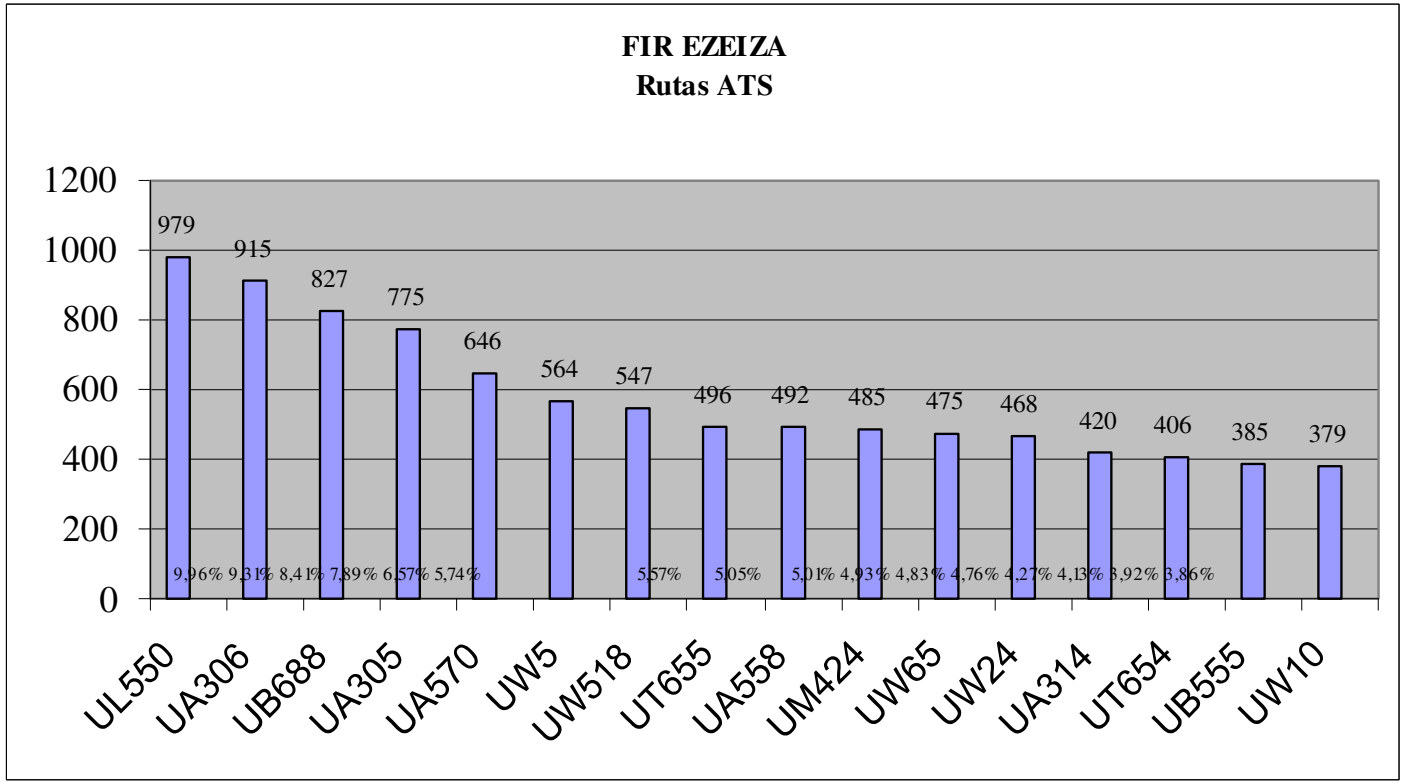
Análisis Red de Rutas – FIR EZEIZA

Rutas FIR EZEIZA – AIP Argentina	RNAV	"Convencionales"
Internacionales	9	12
Nacionales	11	29

AIP	DATOS	Número Movimientos	Porcentaje	Porcentaje acumulado	Observaciones
UA305	UA305	775	7,886%	7,886%	
UA306	UA306	915	9,310%	17,196%	
UA308		0	0,000%	17,196%	
UA310		0	0,000%	17,196%	
UA314	UA314	420	4,274%	21,469%	
UA432	UA432	14	0,142%	21,612%	
UA558	UA558	492	5,006%	26,618%	
UA570	UA570	646	6,573%	33,191%	
UB555	UB555	385	3,917%	37,108%	
UB556	UB556	4	0,041%	37,149%	
	UB655	11	0,112%	37,261%	No existe en AIP
UB684	UB684	50	0,509%	37,770%	
	UB688	827	8,415%	46,184%	No está ubicada en la FIR Ezeiza
UG680		0	0,000%	46,184%	
UL211		0	0,000%	46,184%	
UL211F	UL211F	53	0,539%	46,724%	
UL324		0	0,000%	46,724%	
UL550	UL550	979	9,961%	56,685%	
UL793		0	0,000%	56,685%	
UM424	UM424	485	4,935%	61,620%	
UM654	UM654	102	1,038%	62,658%	
UN741		0	0,000%	62,658%	

UN857		0	0,000%	62,658%
UR683		0	0,000%	62,658%
UT101	UT101	25	0,254%	62,912%
UT102		0	0,000%	62,912%
UT103		0	0,000%	62,912%
UT105	UT105	4	0,041%	62,953%
UT106	UT106	6	0,061%	63,014%
UT653	UT653	27	0,275%	63,289%
UT654	UT654	406	4,131%	67,420%
UT655	UT655	496	5,047%	72,466%
UT656		0	0,000%	72,466%
UT657		0	0,000%	72,466%
UT662	UT662	62	0,631%	73,097%
UW10	UW10	379	3,856%	76,954%
UW15		0	0,000%	76,954%
UW17		0	0,000%	76,954%
UW18		0	0,000%	76,954%
UW19		0	0,000%	76,954%
UW2		0	0,000%	76,954%
UW20	UW20	6	0,061%	77,015%
UW22	UW22	36	0,366%	77,381%
UW24	UW24	468	4,762%	82,143%
UW26	UW26	10	0,102%	82,245%
UW29	UW29	2	0,020%	82,265%
UW30		0	0,000%	82,265%
UW31	UW31	49	0,499%	82,764%
UW32	UW32	36	0,366%	83,130%
UW33		0	0,000%	83,130%
UW34		0	0,000%	83,130%
UW36		0	0,000%	83,130%
UW37		0	0,000%	83,130%
UW38		0	0,000%	83,130%

UW39		0	0,000%	83,130%	
UW41		0	0,000%	83,130%	
UW44		0	0,000%	83,130%	
UW5	UW5	564	5,739%	88,869%	
	UW518	547	5,566%	94,434%	No existe en AIP
UW6		0	0,000%	94,434%	
UW62		0	0,000%	94,434%	
UW64		0	0,000%	94,434%	
UW65	UW65	475	4,833%	99,267%	
UW68	UW68	4	0,041%	99,308%	
UW8	UW8	68	0,692%	100,000%	

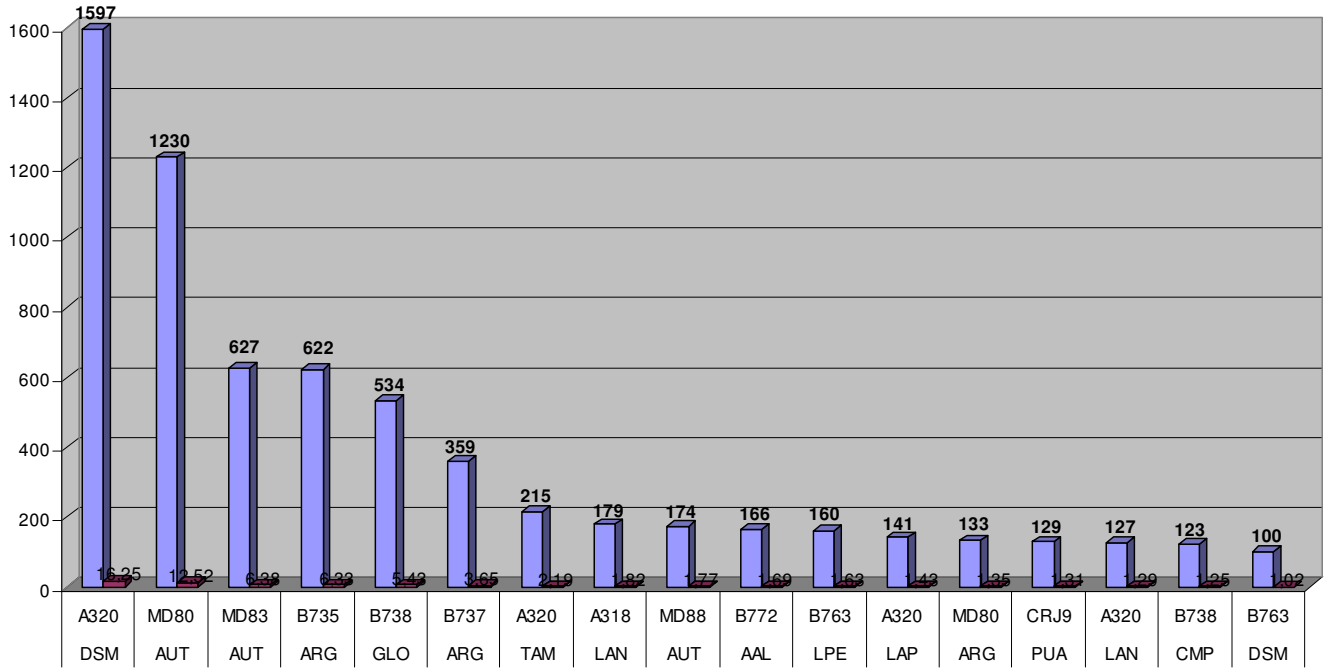

FIR EZEIZA
Rutas ATS
1200
1000
800
600
400
200
0
979
915
827
775
646
564
547
496
492
485
475
468
420
406
385
379
9,96%
9,31%
8,41%
7,89%
6,57%
5,74%
5,57%
5,05%
5,01%
4,93%
4,83%
4,76%
4,27%
4,13%
3,92%
3,86%
UL550
UA306
UB688
UA305
UA570
UW5
UW518
UT655
UA558
UM424
UW65
UW24
UA314
UT654
UB555
UW10

FIR Ezeiza
Pares de Ciudades servidos por Ruta ATS

Número de movimientos			
RUTA	ORIGEN	DESTINO	Total
UA306	SABE	SAME	252
		SAOU	27
		SULS	19
	SABE Total		298
	SADF	SAME	21
		SCEL	17
	SADF Total		38
	SAEZ	SAME	17
		SCEL	458
	SAEZ Total		475
	SUMU	SCEL	105
	SUMU Total		105
UA306 Total			916
UL550	MMMX	SAEZ	60
	MMMX Total		60
	MUHA	SAEZ	8
	MUHA Total		8
	SABE	LETO	4
		SANE	42
		SANT	105
		SASA	141
		ZZZZ	6
	SABE Total		298
	SAEZ	MMMX	47

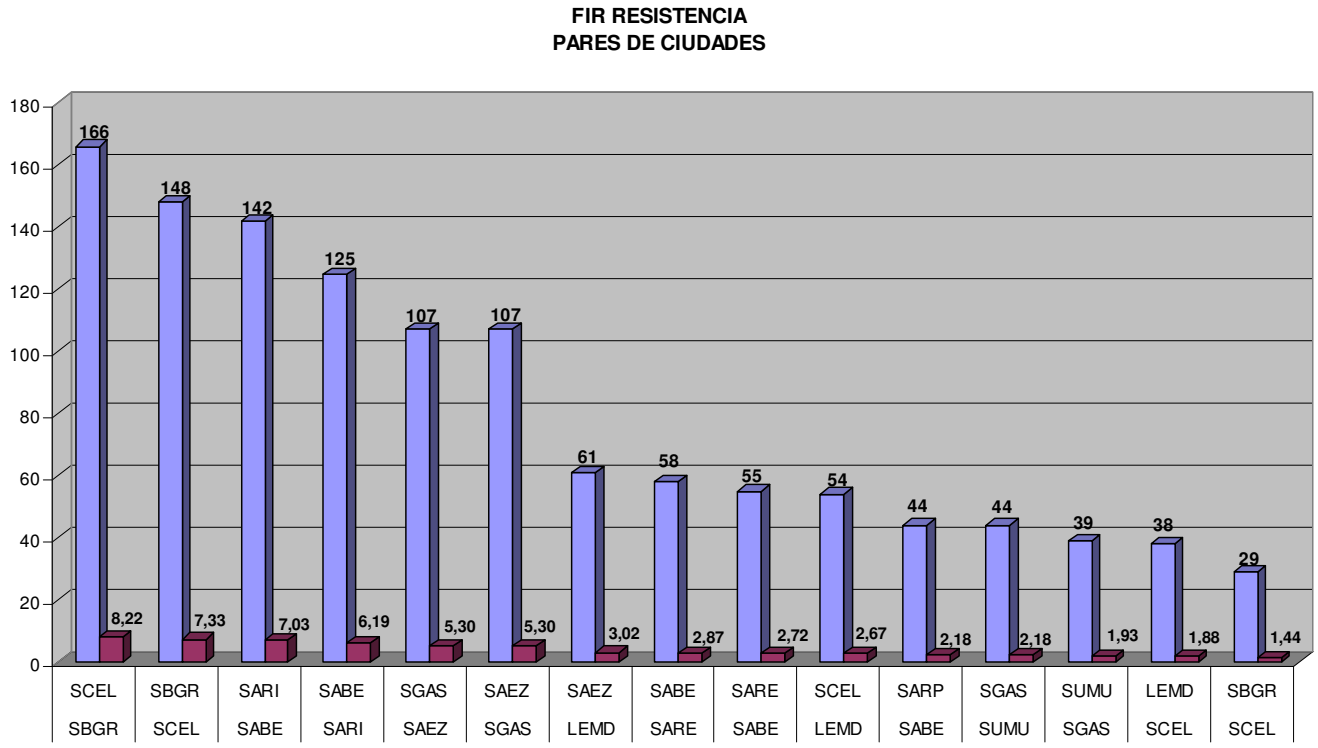
		SPIM	134
	SAEZ Total		181
	SANT	SABE	142
		SADF	18
	SANT Total		160
	SASA	SABE	118
	SASA Total		118
	SPIM	SAEZ	130
		SUMU	14
	SPIM Total		144
	SUMU	SPIM	10
	SUMU Total		10
UL550 Total			979
Total general			1895

FIR EZEIZA
OPERADOR / TIPO



APPENDIX B

FIR Resistencia

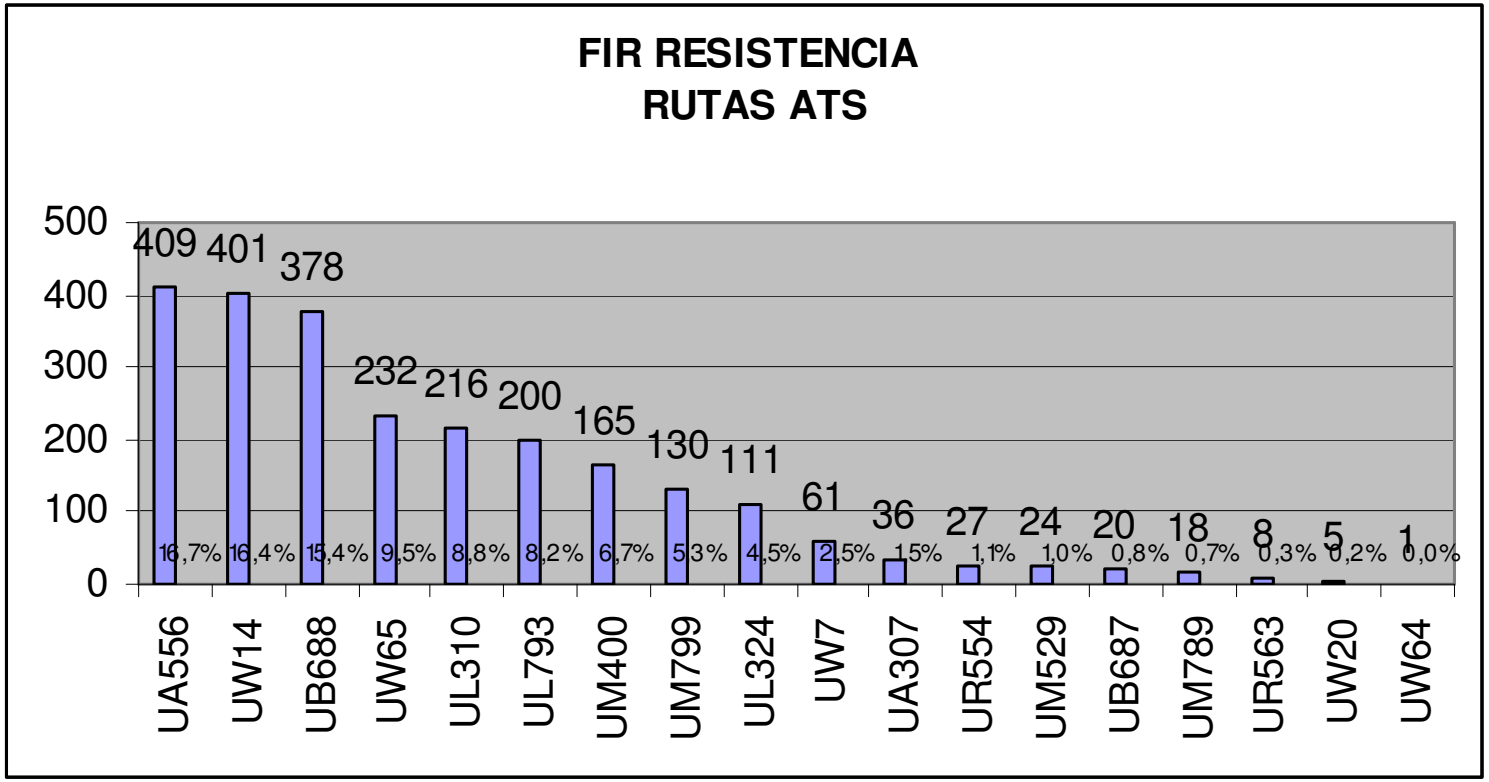


Análisis Red de Rutas – FIR RESISTENCIA

Rutas FIR Resistencia – AIP Argentina	RNAV	"Convencionales"
Internacionales	**7**	**5**
Nacionales	**0**	**6**

AIP	Datos	Número movimientos	Porcentaje	Porcentaje Acumulado	Observaciones
	B688	1	0,041%	0,041%	No existe en AIP
	U556	1	0,041%	0,082%	No existe en AIP
	U688	1	0,041%	0,122%	No existe en AIP
UA307	UA307	36	1,469%	1,592%	
	UA554	2	0,082%	1,673%	No existe en AIP
UA556	UA556	409	16,694%	18,367%	
UB687	UB687	20	0,816%	19,184%	
UB688	UB688	378	15,429%	34,612%	
UL310	UL310	216	8,816%	43,429%	
UL324	UL324	111	4,531%	47,959%	
	UL34	1	0,041%	48,000%	No existe en AIP
UL793	UL793	200	8,163%	56,163%	
	UL794	1	0,041%	56,204%	No existe en AIP
UM400	UM400	165	6,735%	62,939%	
UM529	UM529	24	0,980%	63,918%	
UM789	UM789	18	0,735%	64,653%	
UM799	UM799	130	5,306%	69,959%	
	UN799	1	0,041%	70,000%	No existe en AIP
UR554	UR554	27	1,102%	71,102%	
UR563	UR563	8	0,327%	71,429%	
UW14	UW14	401	16,367%	87,796%	
UW20	UW20	5	0,204%	88,000%	
UW64	UW64	1	0,041%	88,041%	

UW65	UW65	232	9,469%	97,510%
UW7	UW7	61	2,490%	100,000%

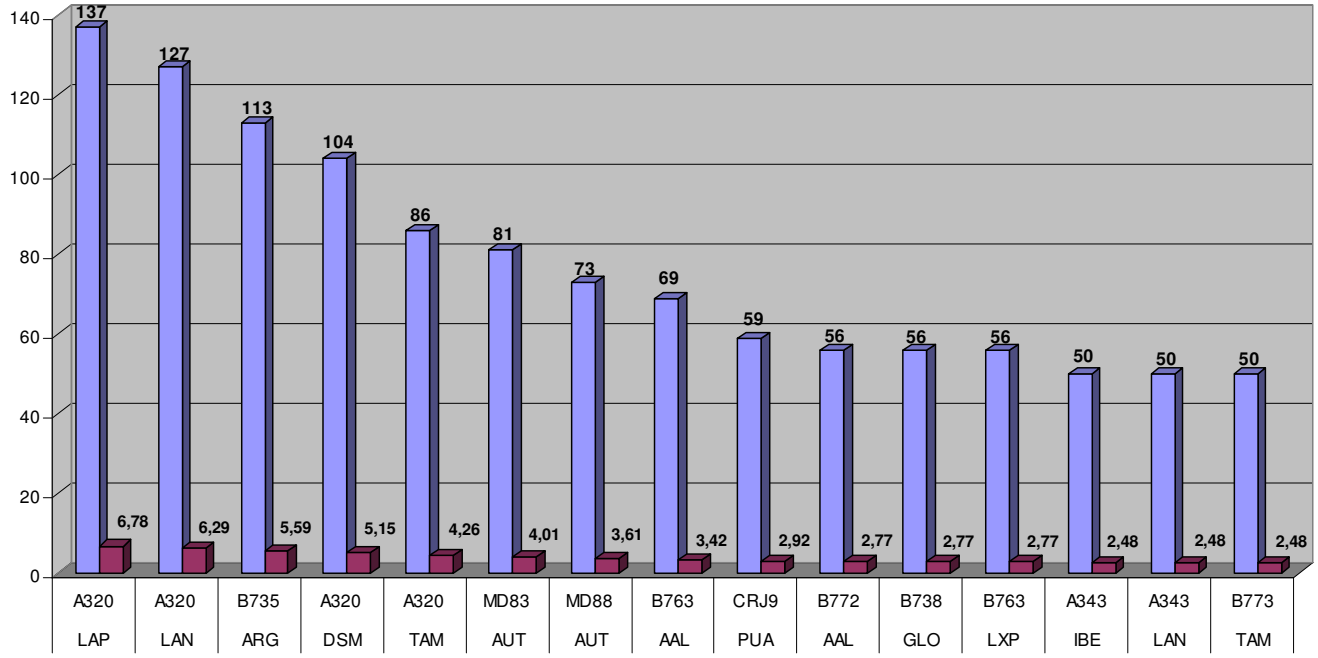

FIR RESISTENCIA
RUTAS ATS
500
400
300
200
100
0
409
401
378
232
216
200
165
130
111
61
36
27
24
20
18
8
5
1
16,7%
16,4%
15,4%
9,5%
8,8%
8,2%
6,7%
5,3%
4,5%
2,5%
1,5%
1,1%
1,0%
0,8%
0,7%
0,3%
0,2%
0,0%
UA556
UW14
UB688
UW65
UL310
UL793
UM400
UM799
UL324
UW7
UA307
UR554
UM529
UB687
UM789
UR563
UW20
UW64

Pares de Ciudades servidos por Ruta ATS

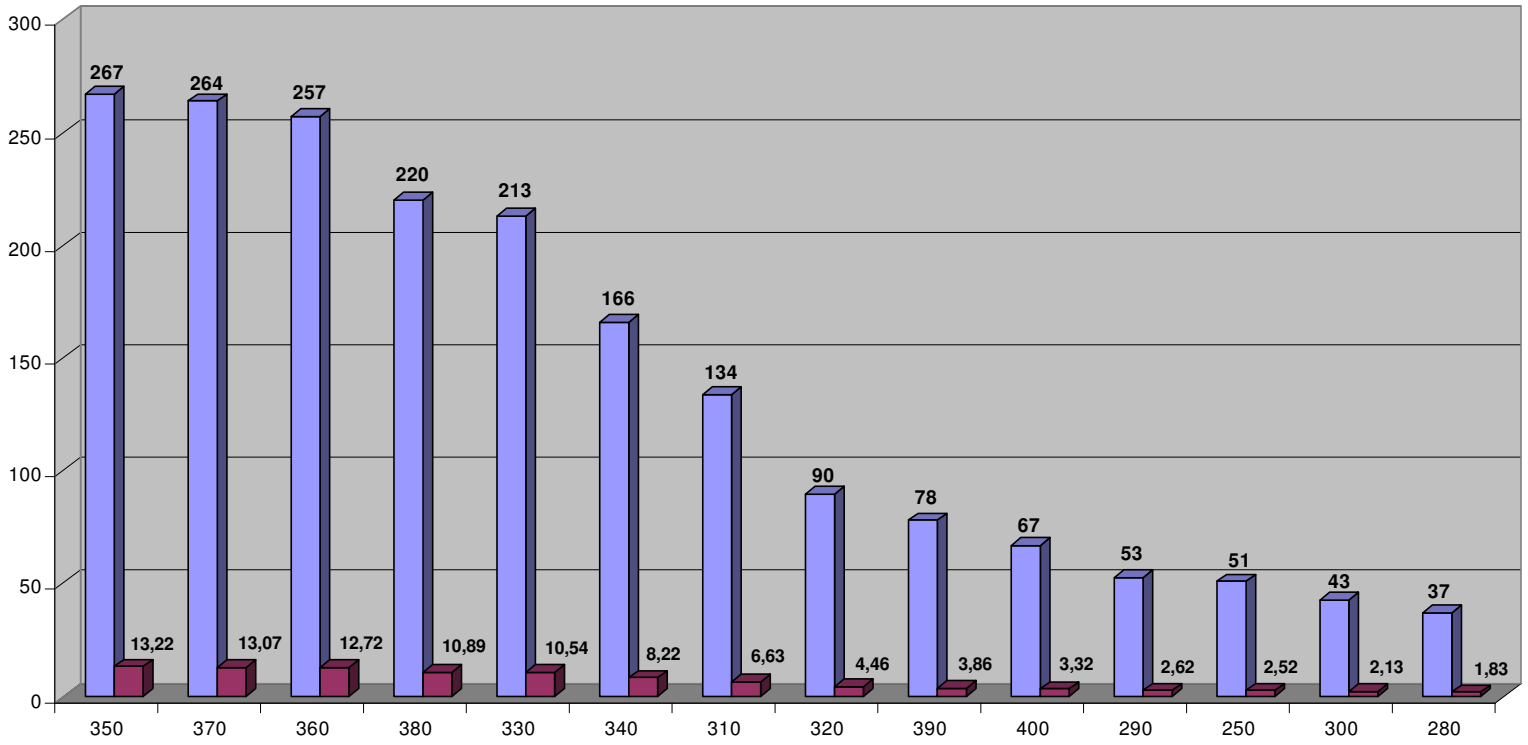
Número movimientos			
Aerovía	origen	destino	Total
UA556	KJFK	SAEZ	26
	KJFK Total		26
	KMIA	SAEZ	7
		SUMU	1
	KMIA Total		8
	SABE	SARI	1
		SGAS	4
		TTPP	1
	SABE Total		6
	SADF	SGAS	2
	SADF Total		2
	SAEZ	KIAD	2
		KJFK	23
		KMIA	2
		LEMD	1
		MDPC	3
		SGAS	107
		SVMI	15
	SAEZ Total		153
	SBCF	SABE	1
	SBCF Total		1
	SBEG	SUMU	2
	SBEG Total		2
	SGAS	SABE	2

		SAEZ	107
		SARE	1
		SAWC	1
		SUMU	39
		SVMU	1
	SGAS Total		151
	SULS	KEWR	1
	SULS Total		1
	SUMU	SAGAS	1
		SGAS	44
		SVPR	1
	SUMU Total		46
	SVMI	SAEZ	12
	SVMI Total		12
	TNCC	SABE	1
	TNCC Total		1
UA556 Total			409

FIR RESISTENCIA
OPERADOR / TIPO DE AERONAVE

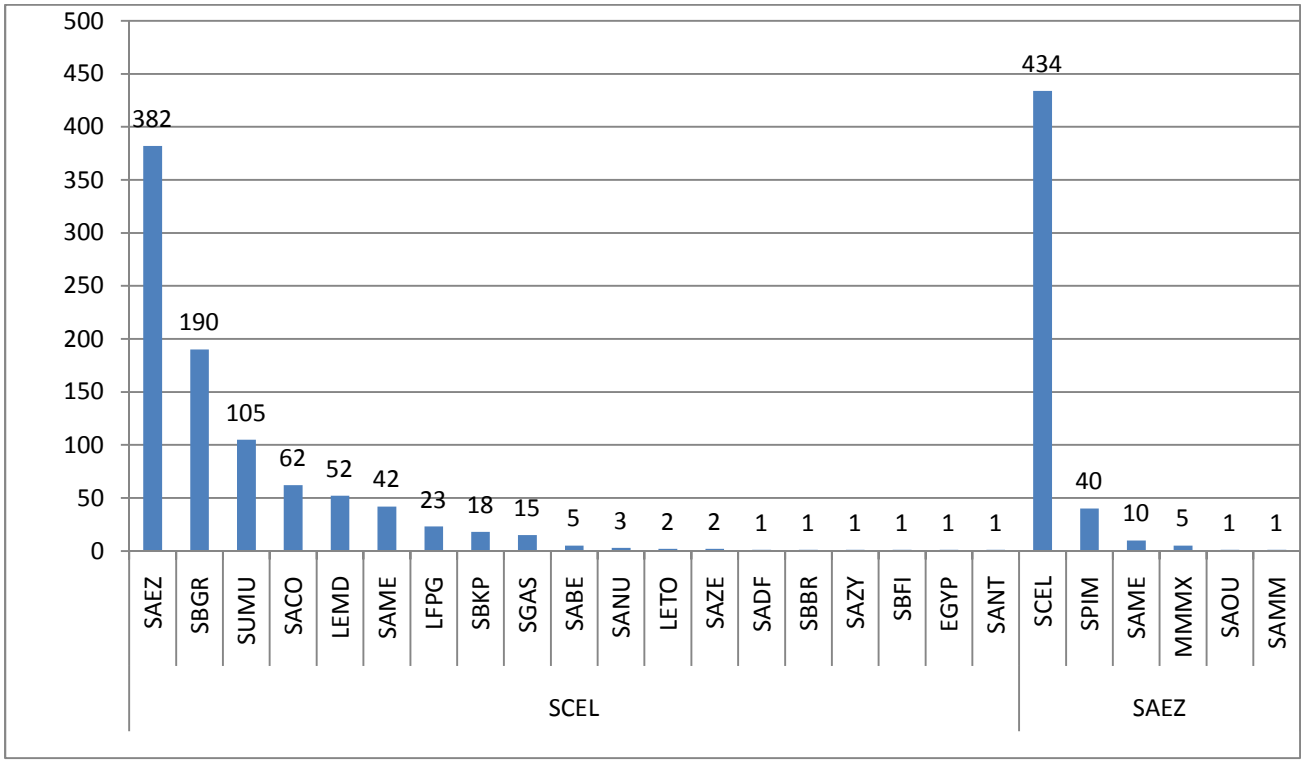


FIR RESISTENCIA - NIVELES DE VUELO

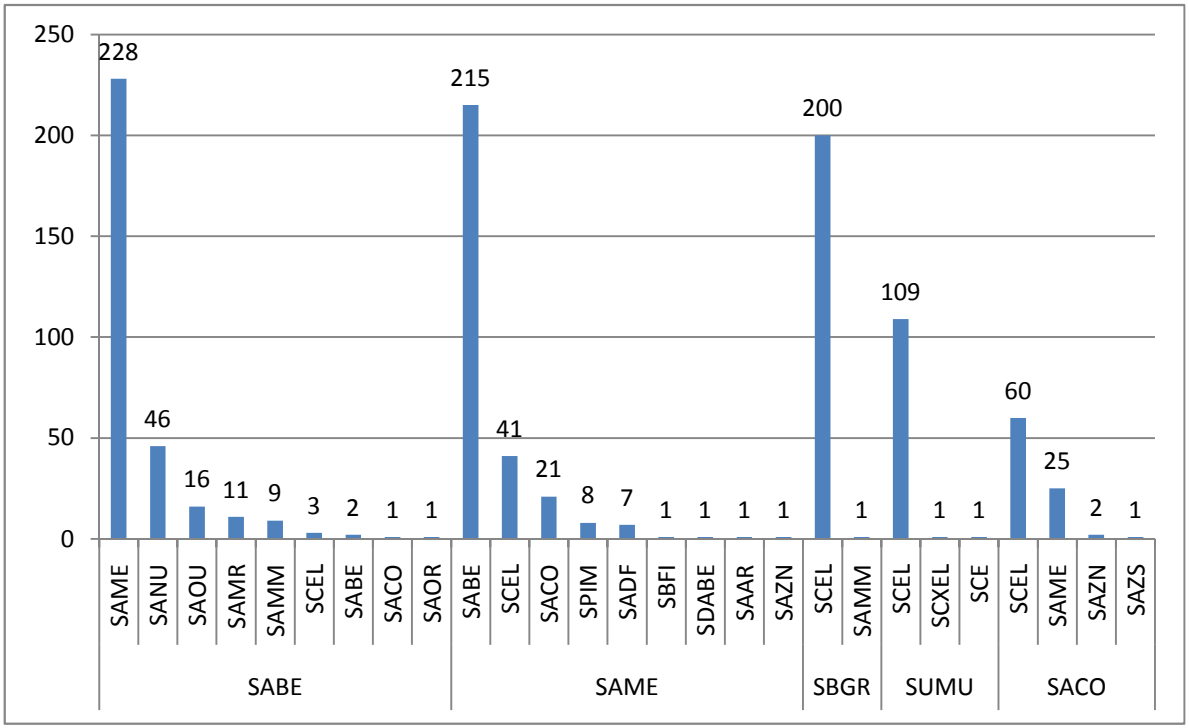


Appendix C

FIR MENDOZA – PARES DE CIUDADES



SAME SBGR SUMU SACO


250
200
150
100
50
0
228
46
16
11
9
3
2
1
1
215
41
21
8
7
1
1
1
1
200
1
109
1
1
60
25
2
1
SAME
SANU
SAOU
SAMR
SAMM
SCEL
SABE
SACO
SAOR
SABE
SCEL
SACO
SPIM
SADF
SBFI
SDABE
SAAR
SAZN
SCEL
SAMM
SCEL
SCXEL
SCE
SCEL
SAME
SAZN
SAZS
SABE
SAME
SBGR
SUMU
SACO

FIR MENDOZA – ANALISIS DE RUTAS ATS

RUTAS AIP	
	UA306
	UM424
	UA307
	UW10
	UT652
	UB684
UW57	UB560
UT653	UB560
	UM529
	UW23
	UW23
	UB560
	UB560
UA306	UW23
	UW3
UW44	UW23
UW23	UB684
	UW24
UW57	UB560
	UM424

RUTA	Total	%	ACUMULADO
UA306	831	29.97%	29.97%
UM424	513	18.50%	48.47%
UA307/306	294	10.60%	59.07%
UW10	238	8.58%	67.65%
UM799	148	5.34%	72.99%
UA307	124	4.47%	77.46%
UA307/UT652	121	4.36%	81.82%
UT652	117	4.22%	86.04%
UB684	88	3.17%	89.22%
UB560/UW57	66	2.38%	91.60%
UW57	52	1.88%	93.47%
UT653/UB560	47	1.69%	95.17%
UT653	38	1.37%	96.54%
UM529	31	1.12%	97.66%
F/AWY	10	0.36%	98.02%
UW23	7	0.25%	98.27%
UB684/UW23	6	0.22%	98.49%
UW3/UB560	5	0.18%	98.67%
UB560	4	0.14%	98.81%
UM424/UW23	3	0.11%	98.92%
UW3/UA306	2	0.07%	98.99%
UA307/UW3	2	0.07%	99.06%
UW37	2	0.07%	99.13%
UW44/UW23	2	0.07%	99.21%
UW55	2	0.07%	99.28%
UW23/UB684	2	0.07%	99.35%
UW24	2	0.07%	99.42%
UW57/UB560	1	0.04%	99.46%
UM424/UA307	1	0.04%	99.50%

	UW44
UW37	UW23
UW37	UB684
	UW24
UW44	UB684
	UW3
UM424	UW44
	UW68
UT653	UM529
	UL322
	UM799
	UR683
	UW14
	UW15

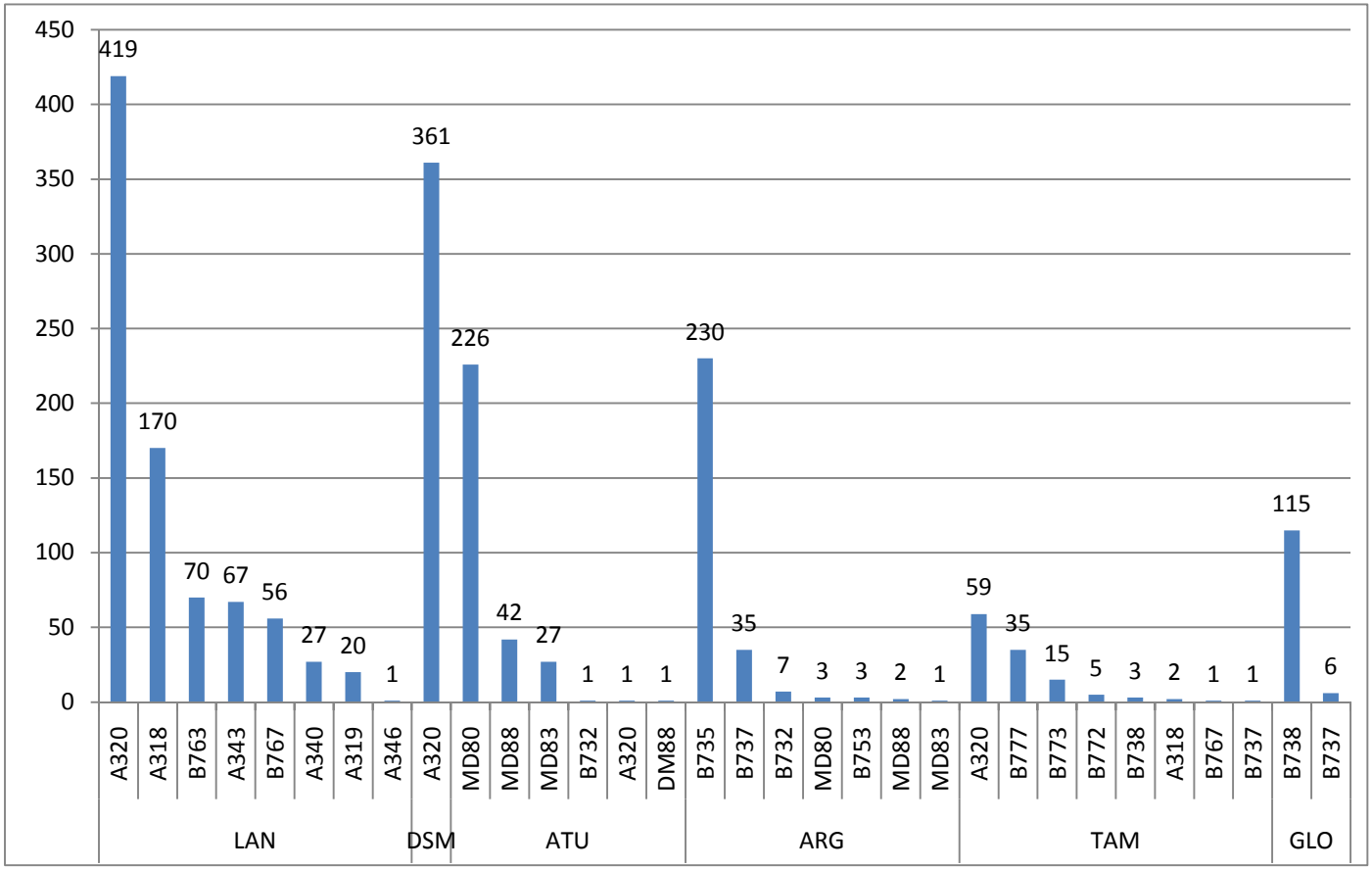
UW44	1	0.04%	99.53%
UA306/UT652	1	0.04%	99.57%
UW23/UW37	1	0.04%	99.60%
UB684/UW3	1	0.04%	99.64%
UW37/UB684	1	0.04%	99.68%
UW24/UM529	1	0.04%	99.71%
UW44/UB684	1	0.04%	99.75%
UW3	1	0.04%	99.78%
UL322	1	0.04%	99.82%
UB560/UT653	1	0.04%	99.86%
UM424/UW44	1	0.04%	99.89%
UW68	1	0.04%	99.93%
UT653/UM529	1	0.04%	99.96%
UA307/UW44	1	0.04%	**100.00%**
Total general	**2773**	**100.00%**	

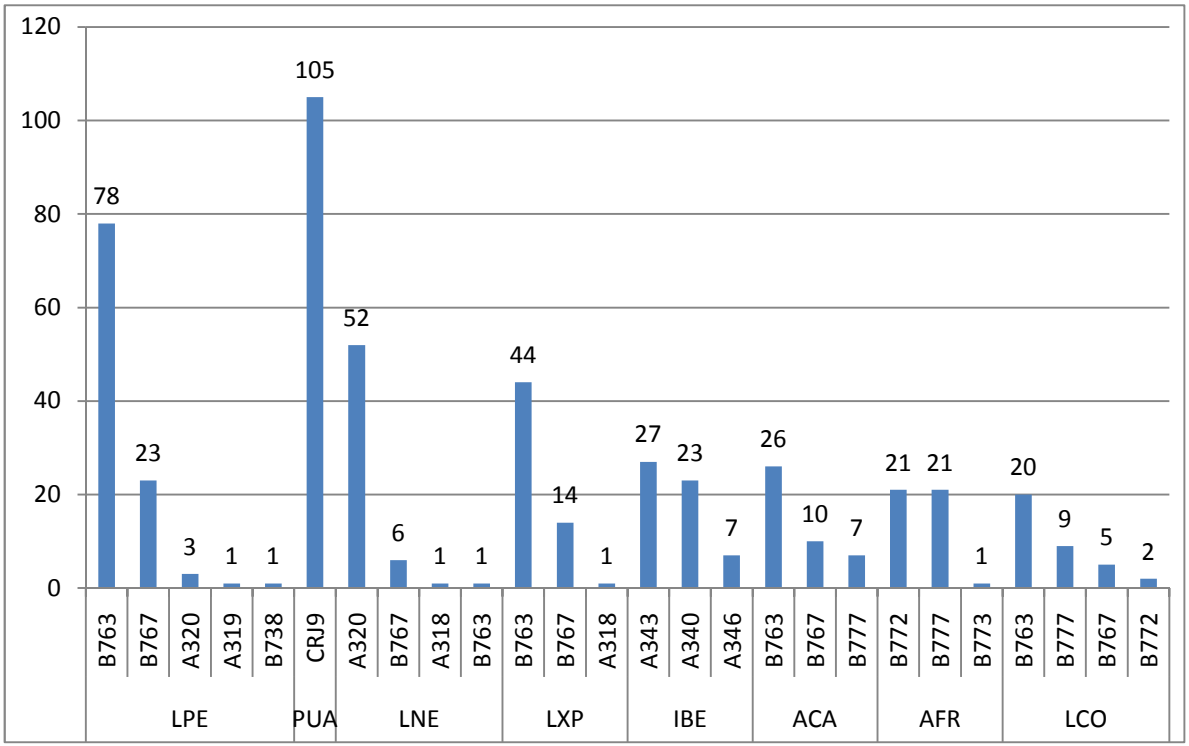
FIR MENDOZA - PARES DE CIUDADES / RUTAS ATS

RUTA	ORIGEN	DESTINO	Total
UA306	SABE	SAME	225
		SAOU	16
		SCEL	3
		SABE	2
		SAOR	1
		SANU	1
	Total SABE		248
	SABE	SAME	2
	Total SABE		2
	SADF	SAME	9
		SCEL	5
	Total SADF		14
	SADP	SAME	2
		SCEL	1
	Total SADP		3
	SAEZ	SCEL	393
		SAME	10
		SAOU	1
	Total SAEZ		404
	SAEZ	SCEL	1
	Total SAEZ		1
	SAME	SCEL	40
		SABE	2
		SPIM	1
	Total SAME		43
	SAME	SCEL	1
	Total		1

	SAME		
	SAZE	SCEL	2
	Total SAZE		2
	SBGR	SCEL	1
	Total SBGR		1
	SEAZ	SCEL	3
	Total SEAZ		3
	SUMU	SCEL	107
		SCXEL	1
		SCE	1
	Total SUMU		109
Total			**831**

FIR MENDOZA – OPERADOR/TIPO DE AERONAVE

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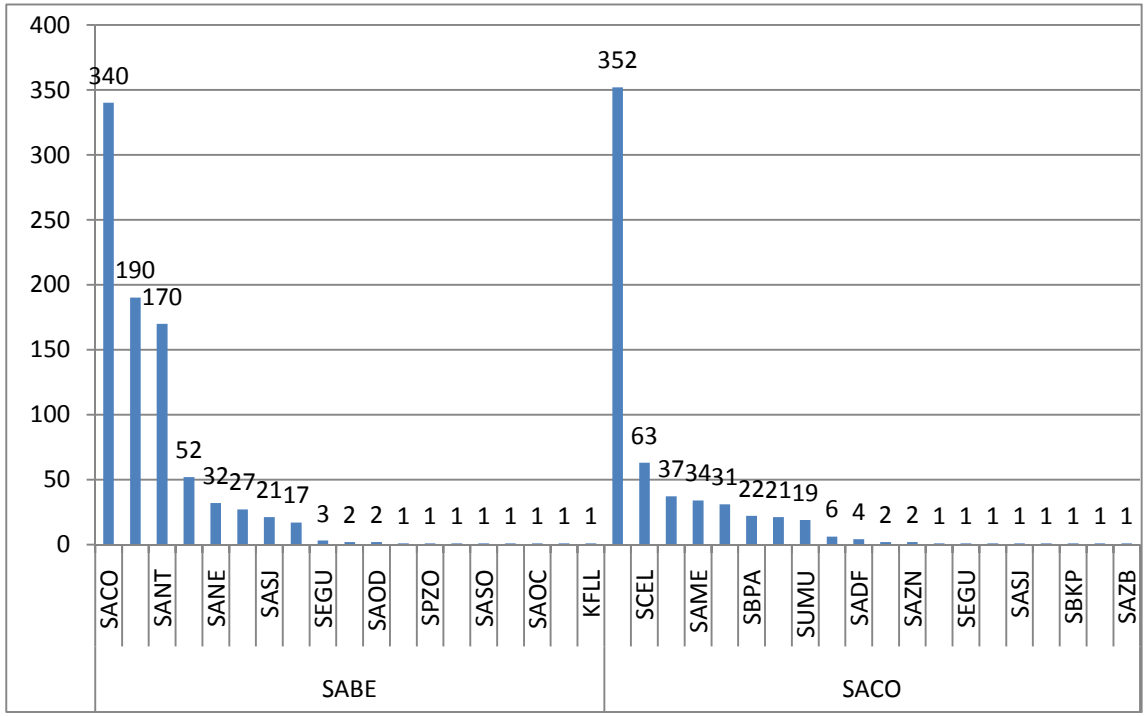
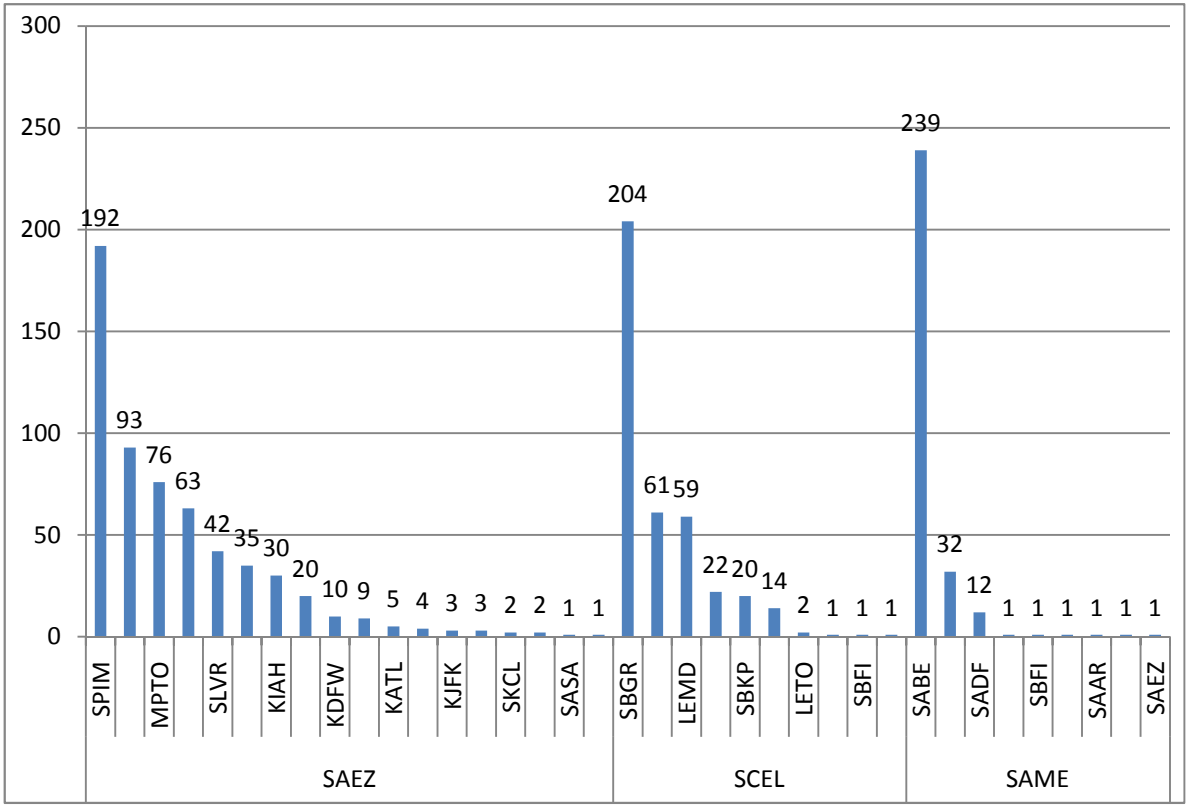
Appendix D

FIR CÓRDOBA – PARES DE CIUDADES

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MPTO
SLVR
KIAH
KDFW
KATL
KJFK
SKCL
SASA
SBGR
LEMD
SBKP
LETO
SBFI
SABE
SADF
SBFI
SAAR
SAEZ
SAEZ
SCEL
SAME

Apéndice D

FIR CÓRDOBA – ANÁLISIS DE RUTAS ATS

AIP	
UA307	UL550
UA432	UW5
UA558	UA307
UR550	UW24
UR560	UL417
UL322	UW8
UL404	
UL417	UW10
UL550	UW14
UL650	UM799
UM529	UW57
UM789	UT653
UM799	UA432
UT651	UA558
UT653	UL404
UW2	UL322
UW3	UW16
UW5	UM529
UW6	UM789
UW7	UW6
UW8	UW2
UW10	
UW14	UW23
UW15	UR550
UW16	UW15
UW17	UW3
UW19	
UW23	UW7
UW24	
UW57	

RUTA	Total	%	ACUMULADO
UL550	993	21.65%	21.65%
UW5	506	11.03%	32.68%
UA307	426	9.29%	41.97%
UW24	412	8.98%	50.95%
UL417	342	7.46%	58.40%
UW8	339	7.39%	65.79%
DCT	330	7.19%	72.99%
UW10	280	6.10%	79.09%
UW14	210	4.58%	83.67%
UM799	156	3.40%	87.07%
UW57	121	2.64%	89.71%
UT653	101	2.20%	91.91%
UA432	80	1.74%	93.66%
UA558	69	1.50%	95.16%
UL404	39	0.85%	96.01%
UL322	35	0.76%	96.77%
UW16	29	0.63%	97.41%
UM529	26	0.57%	97.97%
UM789	19	0.41%	98.39%
UW6	17	0.37%	98.76%
UW2	15	0.33%	99.08%
F/AWY	13	0.28%	99.37%
UW23	12	0.26%	99.63%
UR550	11	0.24%	99.87%
UW15	2	0.04%	99.91%
UW3	2	0.04%	99.96%
UA306	1	0.02%	99.98%
UW7	1	0.02%	**100.00%**
Total general	**4587**	**100.00%**	

FIR CÓRDOBA – ANÁLISIS DE PARES DE CIUDADES / RUTAS ATS

RUTA	ORIGEN	DESTINO	Total
UL550	SABE	SANT	160
		SASA	134
		SANE	27
		SEGU	3
		SPIM	1
		ZZZZ	1
	Total SABE		326
	SAEZ	SPIM	135
		MMMX	58
		SEQU	3
		SEGU	3
		KMIA	1
		SASA	1
		SCDA	1
	Total SAEZ		202
	SANT	SABE	193
		SADF	1
		SPQU	1
		SAEZ	1
	Total SANT		196
	SPIM	SAEZ	123
		SUMU	13
		SACO	5
	Total SPIM		141
	MMMX	SAEZ	50
	Total MMMX		50
	SASA	SABE	39
	Total SASA		39
	SUMU	SPIM	13
	Total SUMU		13

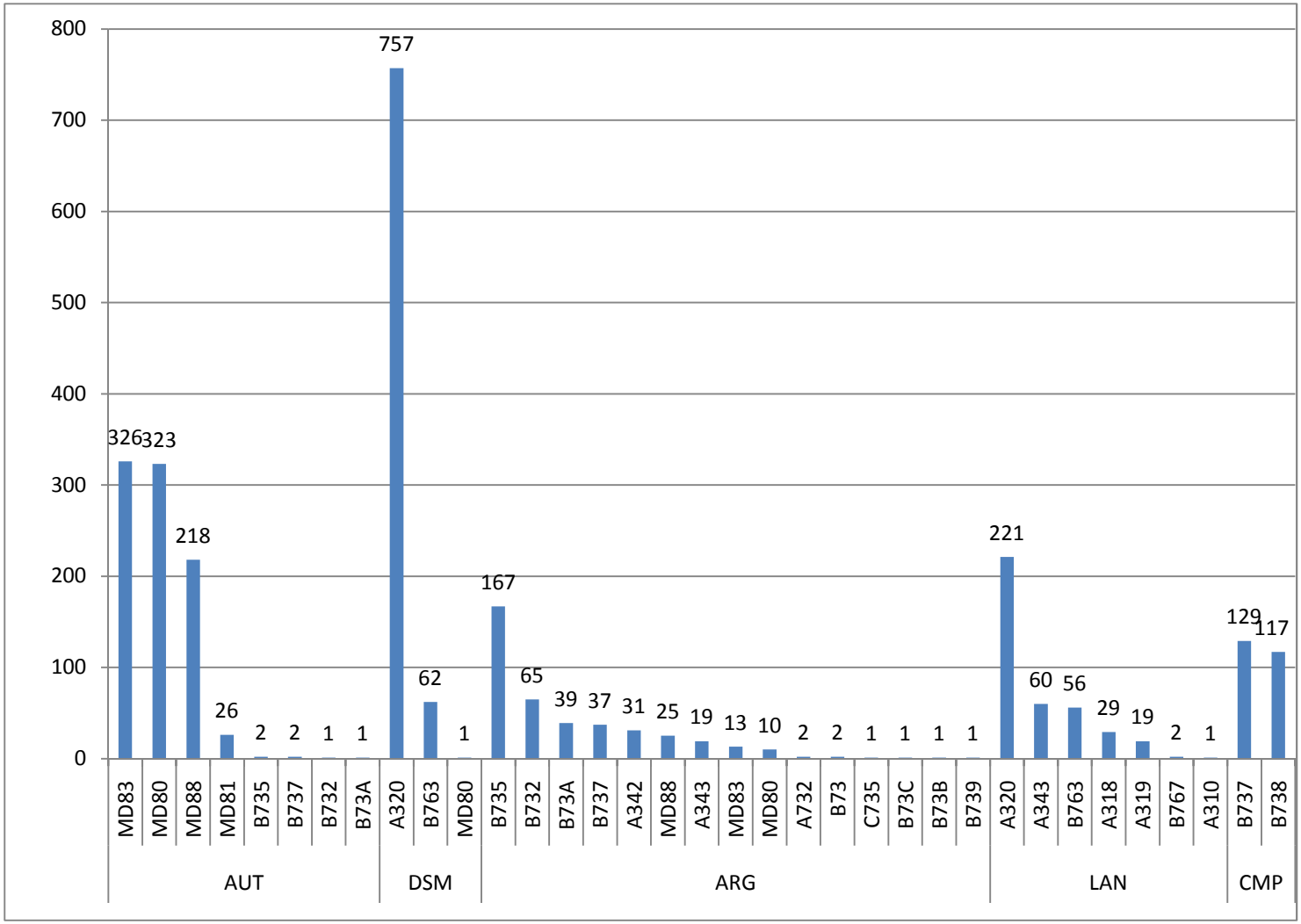
	SEGU	SABE	4
		SAEZ	3
		SANT	1
	Total SEGU		8
	MUHA	SAEZ	4
	Total MUHA		4
	SANE	SABE	2
		SADF	1
	Total SANE		3
	MPTO	SAEZ	2
	Total MPTO		2
	SADF	SANT	1
		SCAR	1
	Total SADF		2
	KHPN	SAAR	1
	Total KHPN		1
	SADP	SANT	1
	Total SADP		1
	AFIL	SABE	1
	Total AFIL		1
	SAAR	KPBI	1
	Total SAAR		1
	MSLP	SABE	1
	Total MSLP		1
	KIAH	SAEZ	1
	Total KIAH		1
	SCFA	SANT	1
	Total SCFA		1
Total UL550			**993**
UW5	SABE	SACO	337

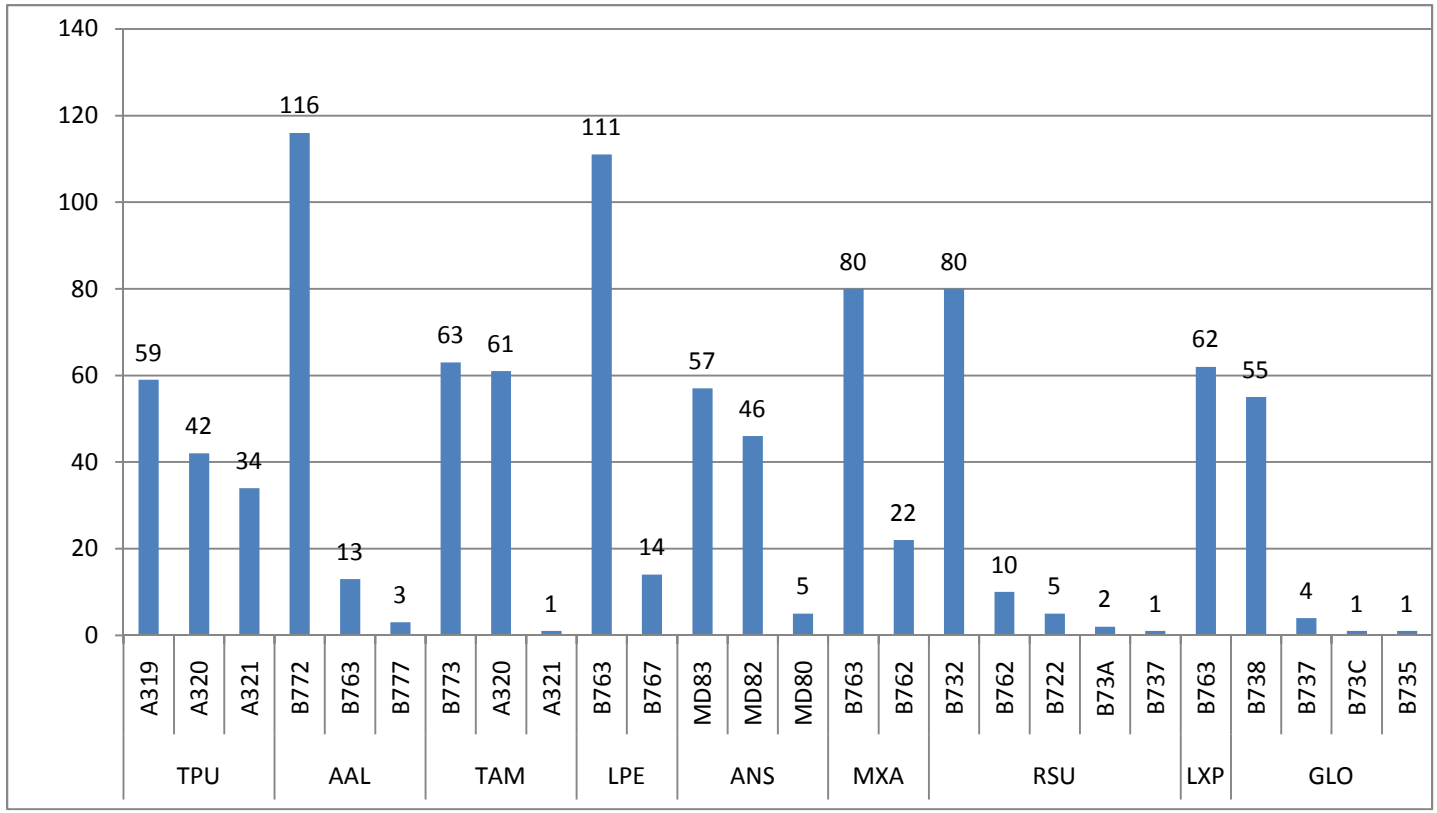
		SANC	12
		SAME	1
	Total SABE		350
	SASA	SABE	54
		SACO	20
		SAOR	1
	Total SASA		75
	SAEZ	SACO	35
		SPIM	2
	Total SAEZ		37
	SACO	SASA	21
		SPIM	6
		SABE	2
		MPTO	1
		SEGU	1
	Total SACO		31
	SADF	SACO	4
		SANO	1
		SANL	1
	Total SADF		6
	SANT	SACO	3
	Total SANT		3
	SADP	SACO	2
	Total SADP		2
	ZZZZ	SABE	1
	Total ZZZZ		1
	SAME	SABE	1
	Total SAME		1
Total UW5			**506**
UA307	SCEL	SBGR	186
		SACO	60
		SBKP	18
		SGAS	1
	Total SCEL		265

	SACO	SCEL	60
		SAME	33
		SBGR	2
		SBKP	1
		SARI	1
		SAZN	1
		SBCT	1
	Total SACO		99
	SAME	SACO	32
		SACD	1
		SBFI	1
	Total SAME		34
	SGAS	SCEL	13
		SACO	2
		SAME	1
	Total SGAS		16
	SBGR	SCEL	4
	Total SBGR		4
	SGES	SCEL	4
	Total SGES		4
	LFPG	SCEL	1
	Total LFPG		1
	SBFI	SCEL	1
	Total SBFI		1
	GCTS	SCEL	1
	Total GCTS		1
	SARE	SABE	1
	Total SARE		1
Total UA307			**426**
UW24	SACO	SABE	349
		SAEZ	36
		SADF	4
		SCEL	2

	Total SACO		391
	SANL	SABE	5
		SADF	1
	Total SANL		6
	SABE	SANU	4
		SACO	1
	Total SABE		5
	SAEZ	SPIM	3
	Total SAEZ		3
	SADL	ZZZZ	1
	Total SADL		1
	SCIP	SBGR	1
	Total SCIP		1
	SCIE	SACO	1
	Total SCIE		1
	SACE	SADP	1
	Total SACE		1
	ZZZZ	SAAV	1
	Total ZZZZ		1
	SADF	ZZZZ	1
	Total SADF		1
	SCEL	SACO	1
	Total SCEL		1
Total UW24			**412**

FIR CÓRDOBA – OPERADOR/TIPO DE AERONAVE

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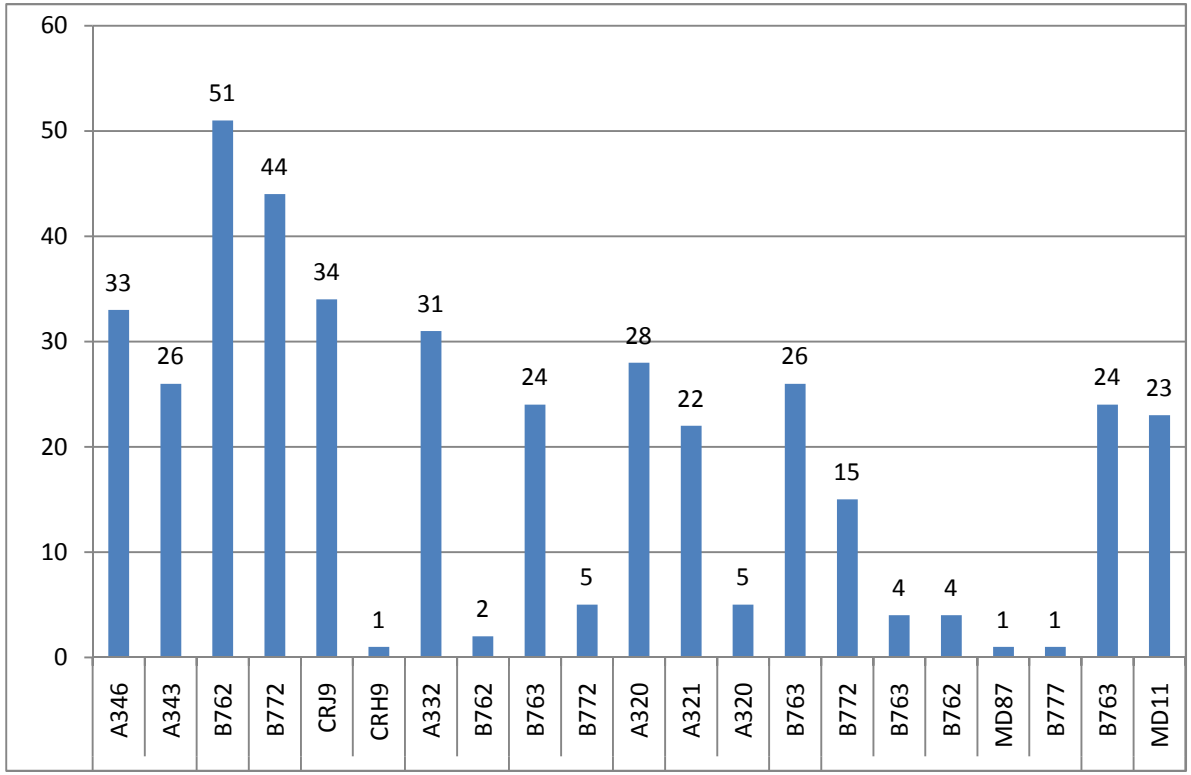
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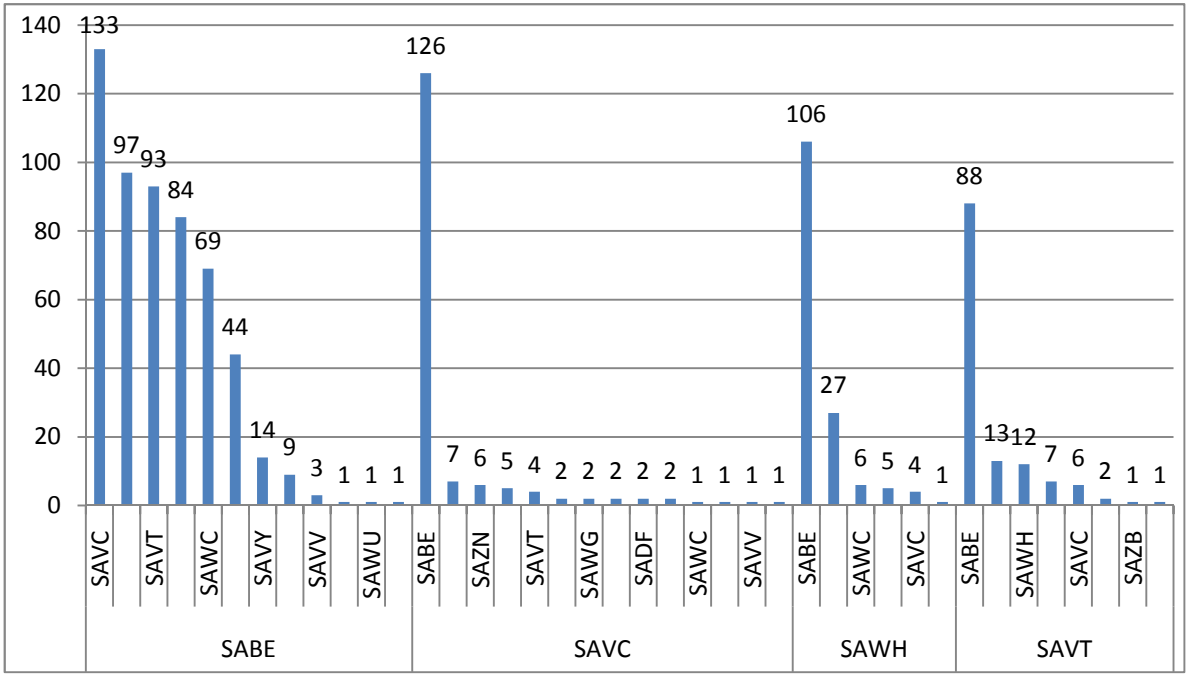
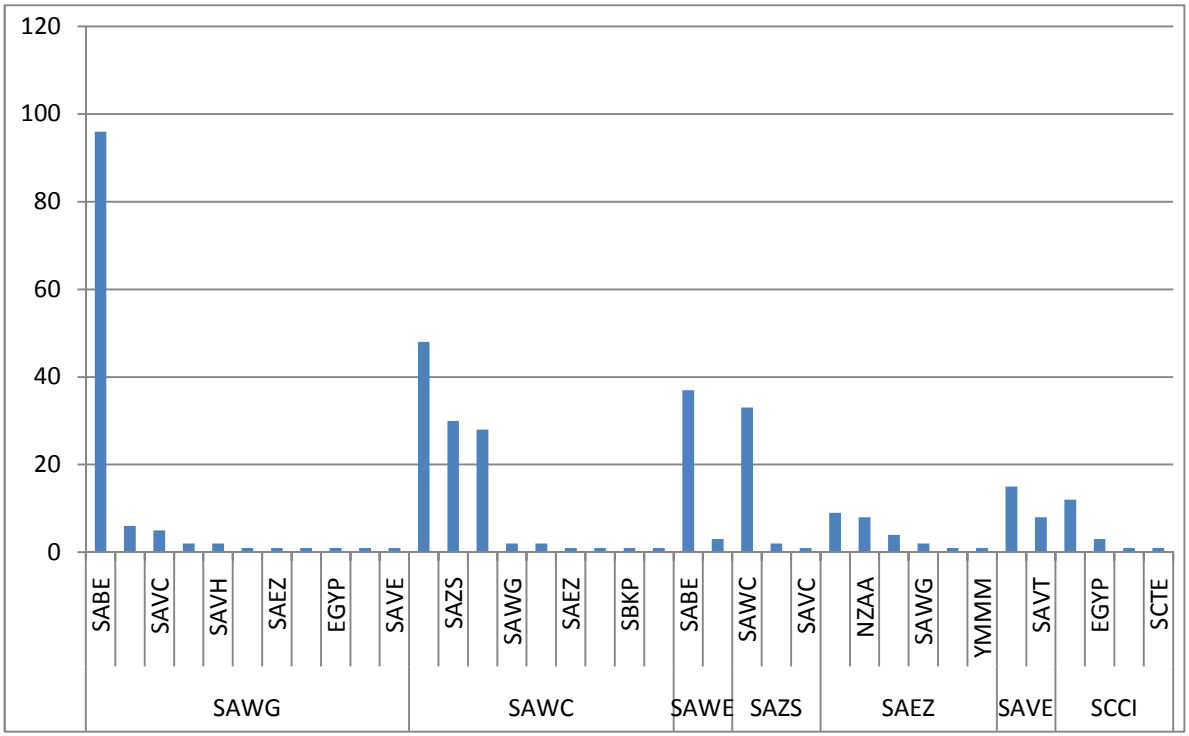
Apéndice E

FIR COMODORO RIVADAVIA – PARES DE CIUDADES

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SAWC
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SAWG
YMMM
SAVT
EGYP
SCTE
SAWG
SAWC
SAWE
SAZS
SAEZ
SAVE
SCCI

FIR COMODORO RIVADAVIA – ANÁLISIS DE RUTAS ATS

AIP		RUTA	Total	%	ACUMULADO
UA570	UA570	UA570	807	55.50%	55.50%
UG550	UT108	UT108	126	8.67%	64.17%
UB561	UT109	UT109	111	7.63%	71.80%
UB682	UT662	UT662	64	4.40%	76.20%
UL775	UW48	UW48	53	3.65%	79.85%
UT101	UW45	UW45	38	2.61%	82.46%
UT102	UW52	UW52	36	2.48%	84.94%
UT103	UW44	UW44	35	2.41%	87.35%
UT105	UT659	UT659	33	2.27%	89.61%
UT106	UG550	UG550	29	1.99%	91.61%
UT108	UW40	UW40	21	1.44%	93.05%
UT109	UT657	UT657	16	1.10%	94.15%
UT656	UT105	UT105	13	0.89%	95.05%
UT657	UW58	UW58	10	0.69%	95.74%
UT658	UW41	UW41	9	0.62%	96.35%
UT659	UW18	UW18	9	0.62%	96.97%
UT662	UT101	UT101	6	0.41%	97.39%
UW18	UW54	UW54	6	0.41%	97.80%
UW33		DCT	6	0.41%	98.21%
UW36	UT102	UT102	5	0.34%	98.56%
UW38	UT658	UT658	4	0.28%	98.83%
UW39	UW33	UW33	4	0.28%	99.11%
UW41	UT656	UT656	2	0.14%	99.24%
UW42	UW56	UW56	2	0.14%	99.38%
UW40	UW42	UW42	2	0.14%	99.52%
UW44	UW39	UW39	2	0.14%	99.66%
UW45		UW22	1	0.07%	99.72%
UW46	UT103	UT103	1	0.07%	99.79%
UW48	UT106	UT106	1	0.07%	99.86%
UW50		DCT/VLS	1	0.07%	99.93%

UW52

UW54

UW56

UW58

UW63

UT661	1	0.07%	**100.00%**
Total general	**1454**	**100.00%**	

FIR COMODORO RIVADAVIA – PARES DE CIUDADES / RUTAS ATS

RUTA	ORIGEN	DESTINO	Total
UA570	SABE	SAVC	133
		SAVT	93
		SAWG	70
		SAWC	69
		SAWH	63
		SAWE	34
		SAVY	14
		SAVV	3
		SAWD	1
		SAWU	1
		SAVE	1
	Total SABE		482
	SABW	SAWH	1
	Total SABW		1
	SADF	SAWG	5
		SAVC	2
	Total SADF		7
	SAEZ	YSSY	9
		SAWH	3
		SAWG	2
		SAVT	1
		NZAA	1
		YMMM	1
	Total SAEZ		17
	SAVC	SABE	124
		SAZM	5
		SAVT	4
		SAWG	2

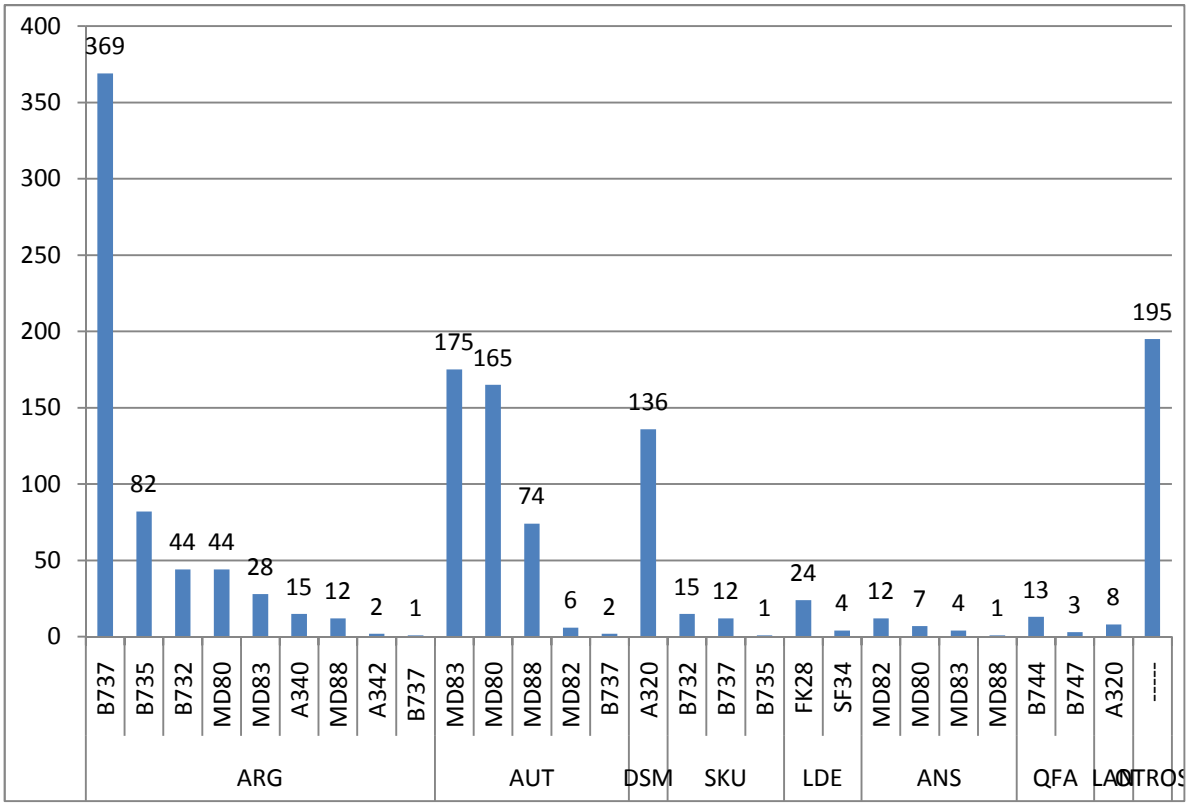
		SAWH	2
		SADF	2
		SARE	1
		SAEZ	1
		SAVV	1
		SAVY	1
	Total SAVC		143
	SAVH	SAWG	1
		SABE	1
	Total SAVH		2
	SAVT	SABE	85
		SAWH	10
		SAWC	7
		SAVC	6
		SAWG	2
		SAZB	1
		SAEZ	1
	Total SAVT		112
	SAVV	SABE	2
	Total SAVV		2
	SAVY	SABE	16
	Total SAVY		16
	SAWC	SABE	1
	Total SAWC		1
	SAWG	SABE	8
		SAVC	5
		SAVH	2
		SAZN	1
	Total SAWG		16
	SAWH	SABE	3

		SAVT	2
	Total SAWH		5
	SAZB	SAVT	1
		SAVC	1
	Total SAZB		2
	SGAS	SAWC	1
	Total SGAS		1
Total UA570			**807**
UT108	SABE	SAWH	3
		SAWE	1
	Total SABE		4
	SAWC	SAEZ	1
	Total SAWC		1
	SAWE	SABE	35
		SAEZ	1
	Total SAWE		36
	SAWG	SABE	2
	Total SAWG		2
	SAWH	SABE	76
		SAEZ	5
		SADF	1
	Total SAWH		82
	SAZN	SAWG	1
	Total SAZN		1
Total UT108			**126**
UT109	SABE	SAWG	11
		SAWH	1

	Total SABE		12
	SAVC	SAWH	1
	Total SAVC		1
	SAVT	SAWH	1
		SABE	1
	Total SAVT		2
	SAWE	SABE	1
	Total SAWE		1
	SAWG	SABE	82
		SADF	5
		SAEZ	1
		SAVT	1
		SADP	1
	Total SAWG		90
	SAWH	SABE	3
	Total SAWH		3
	SAZN	SAVC	1
	Total SAZN		1
	YSSY	SAEZ	1
	Total YSSY		1
Total UT109			**111**

FIR COMODORO RIVADAVIA

OPERADOR/TIPO DE AERONAVE



FIR COMODORO RIVADAVIA

NÚMERO DE VUELOS POR NIVELES DE VUELO

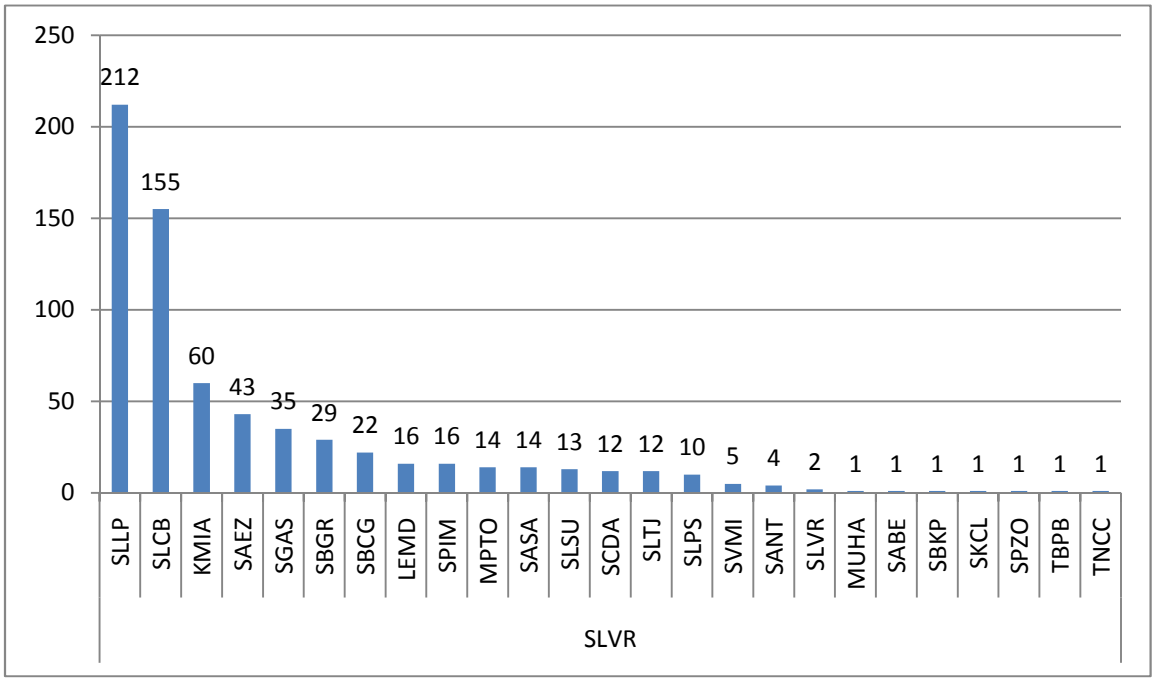
FL	Total	%	ACUMULADO
340	232	15.97%	15.97%
330	216	14.87%	30.83%
320	181	12.46%	43.29%
350	180	12.39%	55.68%
360	119	8.19%	63.87%
310	99	6.81%	70.68%
370	87	5.99%	76.67%
390	**52**	**3.58%**	**80.25%**
280	49	3.37%	83.62%
380	41	2.82%	86.44%
270	39	2.68%	89.13%
290	39	2.68%	91.81%
300	32	2.20%	94.01%
400	21	1.45%	95.46%
260	20	1.38%	96.83%
410	14	0.96%	97.80%
250	14	0.96%	98.76%
430	9	0.62%	99.38%
420	7	0.48%	99.86%
470	1	0.07%	99.93%
450	1	0.07%	**100.00%**
Total general	**1453**	**100.00%**	

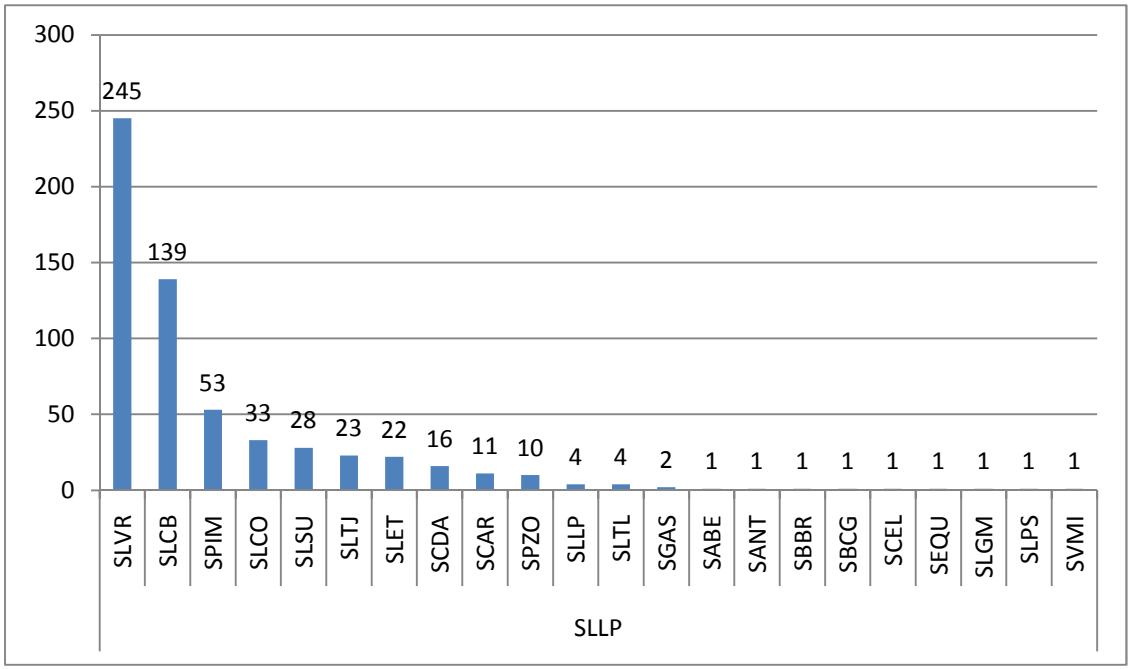
BOLIVIA

Apéndice F

FIR LA PAZ

FIR LA PAZ – PARES DE CIUDADES

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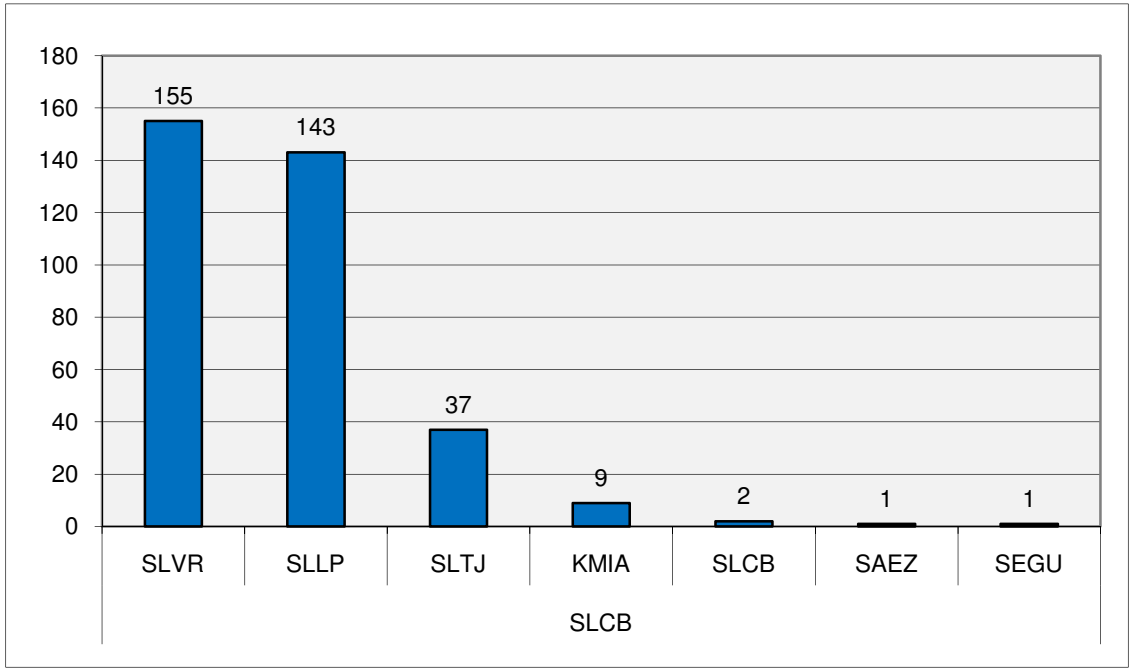
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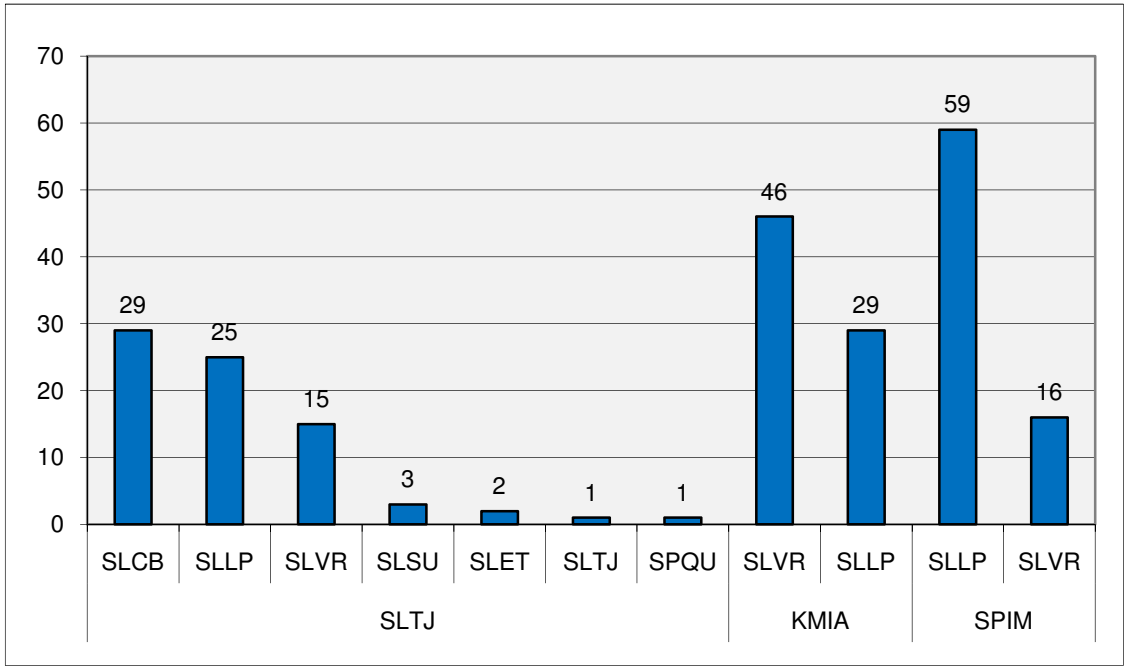
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SLVR
SLTJ
KMIA
SPIM

FIR LA PAZ – ANÁLISIS DE RUTAS ATS

RUTA	Total	%	ACUMULADO
UA304	700	31.06%	31.06%
UB677	651	28.88%	59.94%
UA321	136	6.03%	65.97%
UL404	85	3.77%	69.74%
UA320	82	3.64%	73.38%
UW2	75	3.33%	76.71%
UT711	65	2.88%	79.59%
UA301	64	2.84%	82.43%
UM415	59	2.62%	85.05%
UM664	55	2.44%	87.49%
UW6	48	2.13%	89.62%
UL309	41	1.82%	91.44%
UA316	38	1.69%	93.12%
UL322	35	1.55%	94.68%
UB652	30	1.33%	96.01%
UL540	25	1.11%	97.12%
UL797	24	1.06%	98.18%
UR550	9	0.40%	98.58%
UA558	5	0.22%	98.80%
UW3	5	0.22%	99.02%
UL793	4	0.18%	99.20%
UW8	4	0.18%	99.38%
UL304	2	0.09%	99.47%
UL417	2	0.09%	99.56%
UR559	2	0.09%	99.65%
UW7	2	0.09%	99.73%
T510	1	0.04%	99.78%
UB664	1	0.04%	99.82%

AIP	
UA304	
UB677	
UA321	
UL404	
UA320	
UW2	
	UA568
UA301	UA573
UM415	UB554
UM664	
UW6	
UL309	UL216
UA316	
UL322	
UB652	
UL540	
UL797	
UR550	
UA558	
UL793	
UL417	
UR559	
UW7	UW10
	UB652
	UW12

UL707	1	0.04%	99.87%	UW13
UL743	1	0.04%	99.91%	UR559
UM654	1	0.04%	99.96%	UR550
UR551	1	0.04%	**100.00%**	
TOTAL	**2254**	**100.00%**		

FIR LA PAZ – PARES DE CIUDADES / RUTAS ATS

RUTA	DESTINO	ENTRADA	Total
UA304	SLVR	TORAX	238
		CUB	19
		ELAKO	13
		ATEKO	4
		TMA	4
		TIRKU	2
		IRIKA	2
		ASUVO	1
		DAKON	1
		GERNI	1
		SALCE	1
		DELMA	1
	Total SLVR		287
	SLLP	SALCE	231
		ELAKO	15
		TMA	2
		TORAX	2
		RAVEL	1
		TANOR	1
		KOMPA	1
		SIDAK	1
		DULIA	1
	Total SLLP		255

	SPIM	ELAKO	43
		SALCE	15
	Total SPIM		58
	SLET	TORAX	22
		ATEKO	6
		IRIKA	4
		TMA	2
		ABAPO	1
		DULIA	1
	Total SLET		36
	SBGR	DULIA	25
		GAXOK	1
	Total SBGR		26
	SLPS	DULIA	22
		TORAX	1
	Total SLPS		23
	SPZO	ELAKO	9
	Total SPZO		9
	MPTO	PABES	1
	Total MPTO		1
	SBBR	TORAX	1
	Total SBBR		1
	SBCG	TOTAI	1
	Total SBCG		1
	KMIA	PABES	1
	Total KMIA		1
	SLCB	SALCE	1
	Total SLCB		1
Total UA304			**699**
UB677	SLCB	SISER	151

		DAKON	136
		TANOR	2
		TORAX	1
	Total SLCB		290
	SLLP	TANOR	139
		KOMPA	53
		SALCE	2
	Total SLLP		194
	SLVR	TIRKU	155
		KOMPA	3
		RBC	1
		DAKON	1
		LAIKA	1
	Total SLVR		161
	SCDA	EGASO	1
	Total SCDA		1
	SEGU	TANOR	1
	Total SEGU		1
	SPIM	KOMPA	1
	Total SPIM		1
	SAEZ	KADAL	1
	Total SAEZ		1
	SLCO	ELANI	1
	Total SLCO		1
Total UB677			**650**

FIR LA PAZ - OPERADOR/TIPO DE AERONAVE

CIA	TIPO ACFT	Total	%	ACUMULADO
RSU	B722	605	26.77%	26.77%
	B732	345	15.27%	42.04%
	B762	50	2.21%	44.25%
	B743	22	0.97%	45.22%
	B733	6	0.27%	45.49%
	B462	2	0.09%	45.58%
	B737	2	0.09%	45.66%
	A319	1	0.04%	45.71%
	A320	1	0.04%	45.75%
	B752	1	0.04%	45.80%
	LJ25	1	0.04%	45.84%
TOTAL RSU		**1036**	**45.84%**	**45.84%**
BOV	B733	358	15.84%	61.68%
	B732	3	0.13%	61.81%
	B737	3	0.13%	61.95%
	B722	2	0.09%	62.04%
	A319	1	0.04%	62.08%
	B762	1	0.04%	62.12%
	C750	1	0.04%	62.17%
	DC10	1	0.04%	62.21%
TOTAL BOV		**370**	**16.37%**	**62.21%**
TPU	A320	91	4.03%	66.24%
	A319	47	2.08%	68.32%
	B722	2	0.09%	68.41%
	B733	1	0.04%	68.45%
	B752	1	0.04%	68.50%
TOTAL TPU		**142**	**6.28%**	**68.50%**

TAM	B462	131	5.80%	74.29%
	A320	1	0.04%	74.34%
	AC90	1	0.04%	74.38%
	B722	1	0.04%	74.42%
	MA60	1	0.04%	74.47%
TOTAL TAM		**135**	**5.97%**	**74.47%**
AAL	B752	121	5.35%	79.82%
	B757	2	0.09%	79.91%
	A320	1	0.04%	79.96%
	B722	1	0.04%	80.00%
	B737	1	0.04%	80.04%
TOTAL AAL		**126**	**5.58%**	**80.04%**
LPE	A319	81	3.58%	83.63%
	A320	1	0.04%	83.67%
	B462	1	0.04%	83.72%
	B732	1	0.04%	83.76%
	B733	1	0.04%	83.81%
	B738	1	0.04%	83.85%
TOTAL LPE		**86**	**3.81%**	**83.85%**
LAN	A319	49	2.17%	86.02%
	A320	6	0.27%	86.28%
	B735	1	0.04%	86.33%
TOTAL LAN		**56**	**2.48%**	**86.33%**
LAP	A320	42	1.86%	88.19%
	A319	1	0.04%	88.23%
TOTAL LAP		**43**	**1.90%**	**88.23%**
GLO	B738	35	1.55%	89.78%
	B737	7	0.31%	**90.09%**
TOTAL GLO		**42**	**1.86%**	**90.09%**
FAB	SBR1	22	0.97%	91.06%

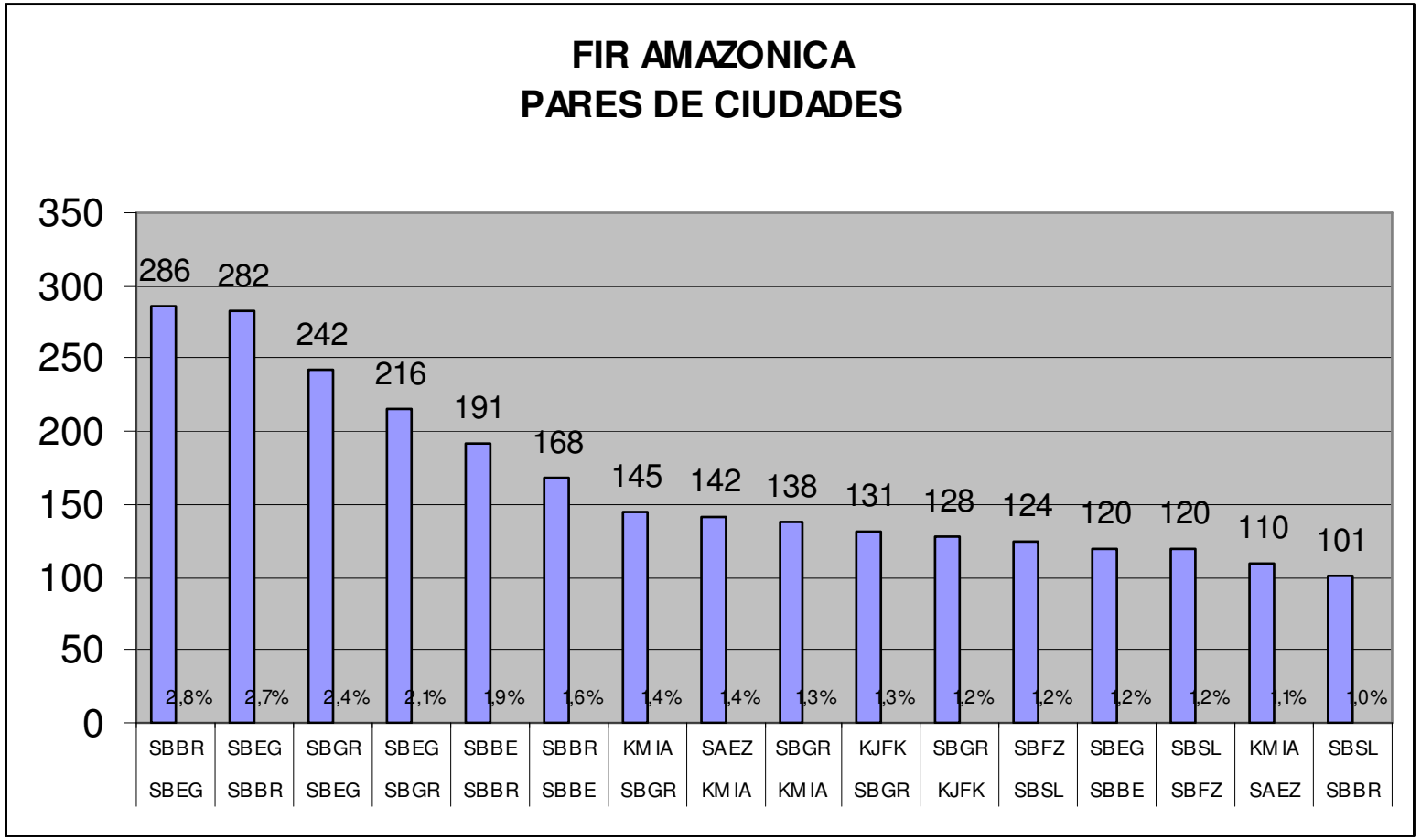
	LJ25	12	0.53%	91.59%
	LJ60	2	0.09%	91.68%
	A319	1	0.04%	91.73%
	B462	1	0.04%	91.77%
TOTAL FAB		**38**	**1.68%**	**91.77%**
BOL	DC10	33	1.46%	93.23%
	B733	1	0.04%	93.27%
	C130	1	0.04%	93.32%
TOTAL BOL		**35**	**1.55%**	**93.32%**
ARG	B735	27	1.19%	94.51%
	A319	1	0.04%	94.56%
TOTAL ARG		**28**	**1.24%**	**94.56%**
CMP	B737	23	1.02%	95.58%
	B738	3	0.13%	95.71%
	B733	1	0.04%	95.75%
TOTAL CMP		**27**	**1.19%**	**95.75%**
SKU	B732	21	0.93%	96.68%
	B737	1	0.04%	96.73%
TOTAL SKU		**22**	0.97%	**96.73%**
MPD	A332	5	0.22%	96.95%
	A322	1	0.04%	96.99%
TOTAL MPD		**6**	**0.27%**	**96.99%**
OTROS		**68**	**3.01%**	**100.00%**

BRASIL

Apéndice G

FIR Amazónica

-



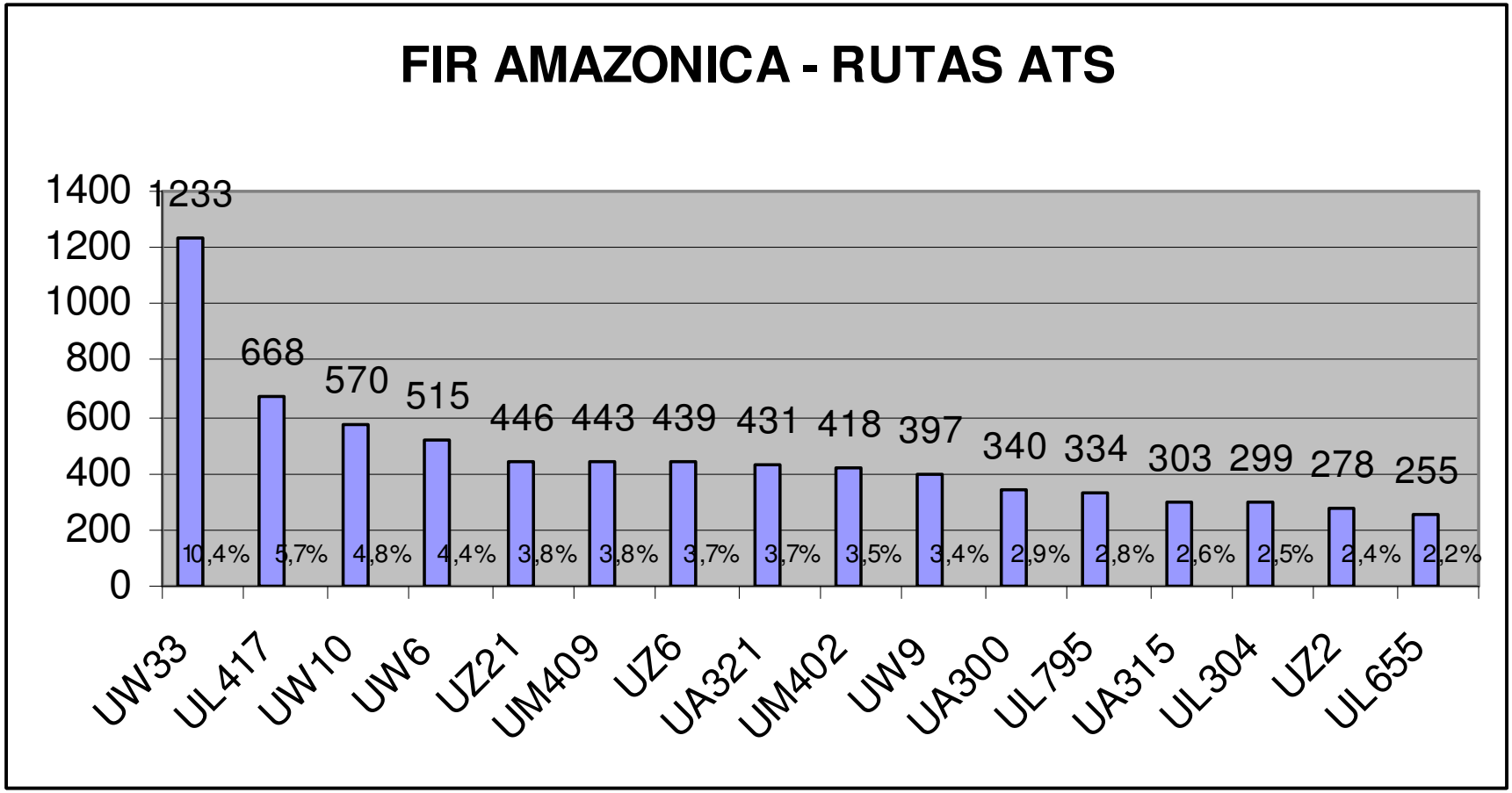
Análisis Red de Rutas – FIR AMAZONICA

Rutas FIR AMAZONICA – AIP Brasil	RNAV	"Convencionales"
Internacionales	21	17
Nacionales	12	10

AIP	Datos	Número de Movimientos	Porcentaje	Porcentaje Acumulada	OBS
	DCT	314	2,659%	2,659%	
	G449	1	0,008%	2,668%	Espacio Aéreo Inferior
	G677	1	0,008%	2,676%	Espacio Aéreo Inferior
	G678	1	0,008%	2,685%	Espacio Aéreo Inferior
UA300	UA300	340	2,880%	5,564%	
UA301	UA301	235	1,990%	7,555%	
UA312	UA312	227	1,923%	9,477%	
UA315	UA315	303	2,566%	12,044%	
UA316	UA316	20	0,169%	12,213%	
UA317	UA317	220	1,863%	14,076%	
UA321	UA321	431	3,650%	17,727%	
UA323	UA323	107	0,906%	18,633%	
	UA415	1	0,008%	18,641%	No existe en el AIP
UA555	UA555	72	0,610%	19,251%	
UA566	UA566	21	0,178%	19,429%	
UB554	UB554	167	1,414%	20,844%	
UB681	UB681	2	0,017%	20,861%	
UG449	UG449	117	0,991%	21,851%	
UL201	UL201	177	1,499%	23,351%	
UL216	UL216	3	0,025%	23,376%	
UL300	UL300	57	0,483%	23,859%	

UL304	UL304	299	2,532%	26,391%
UL306	UL306	196	1,660%	28,051%
UL309	UL309	11	0,093%	28,144%
UL322	UL322	11	0,093%	28,237%
UL417	UL417	668	5,658%	33,895%
UL540	UL540	236	1,999%	35,894%
UL655	UL655	255	2,160%	38,054%
UL776	UL776	200	1,694%	39,748%
UL793	UL793	106	0,898%	40,645%
UL795	UL795	334	2,829%	43,474%
UM402	UM402	418	3,540%	47,014%
UM409	UM409	443	3,752%	50,766%
UM417	UM417	6	0,051%	50,817%
UM423	UM423	122	1,033%	51,851%
UM527		0	0,000%	51,851%
UM656	UM656	4	0,034%	51,884%
UM782	UM782	166	1,406%	53,290%
UM799	UM799	175	1,482%	54,773%
UR550	UR550	25	0,212%	54,984%
UR558	UR558	1	0,008%	54,993%
UR559	UR559	5	0,042%	55,035%
UR640	UR640	201	1,702%	56,738%
UW10	UW10	570	4,828%	61,565%
UW12	UW12	24	0,203%	61,768%
UW16		0	0,000%	61,768%
UW17	UW17	3	0,025%	61,794%
UW28	UW28	6	0,051%	61,845%
UW3	UW3	126	1,067%	62,912%
UW33	UW33	1233	10,443%	73,355%

UW5	UW5	165	1,397%	74,752%	
UW6	UW6	515	4,362%	79,114%	
UW9	UW9	397	3,362%	82,476%	
	UZ1	1	0,008%	82,485%	No está ubicada en la FIR AZ
UZ13	UZ13	2	0,017%	82,502%	
UZ2	UZ2	278	2,355%	84,856%	
	UZ20	3	0,025%	84,882%	No está ubicada en la FIR AZ
UZ21	UZ21	446	3,777%	88,659%	
UZ23	UZ23	179	1,516%	90,175%	
UZ24	UZ24	68	0,576%	90,751%	
UZ25	UZ25	187	1,584%	92,335%	
UZ26	UZ26	66	0,559%	92,894%	
UZ28	UZ28	5	0,042%	92,936%	
UZ3	UZ3	190	1,609%	94,546%	
UZ4	UZ4	82	0,695%	95,240%	
UZ6	UZ6	439	3,718%	98,958%	
UZ7	UZ7	122	1,033%	99,992%	
	W22	1	0,008%	100,000%	Espacio Aéreo Inferior
	Total general	11807			

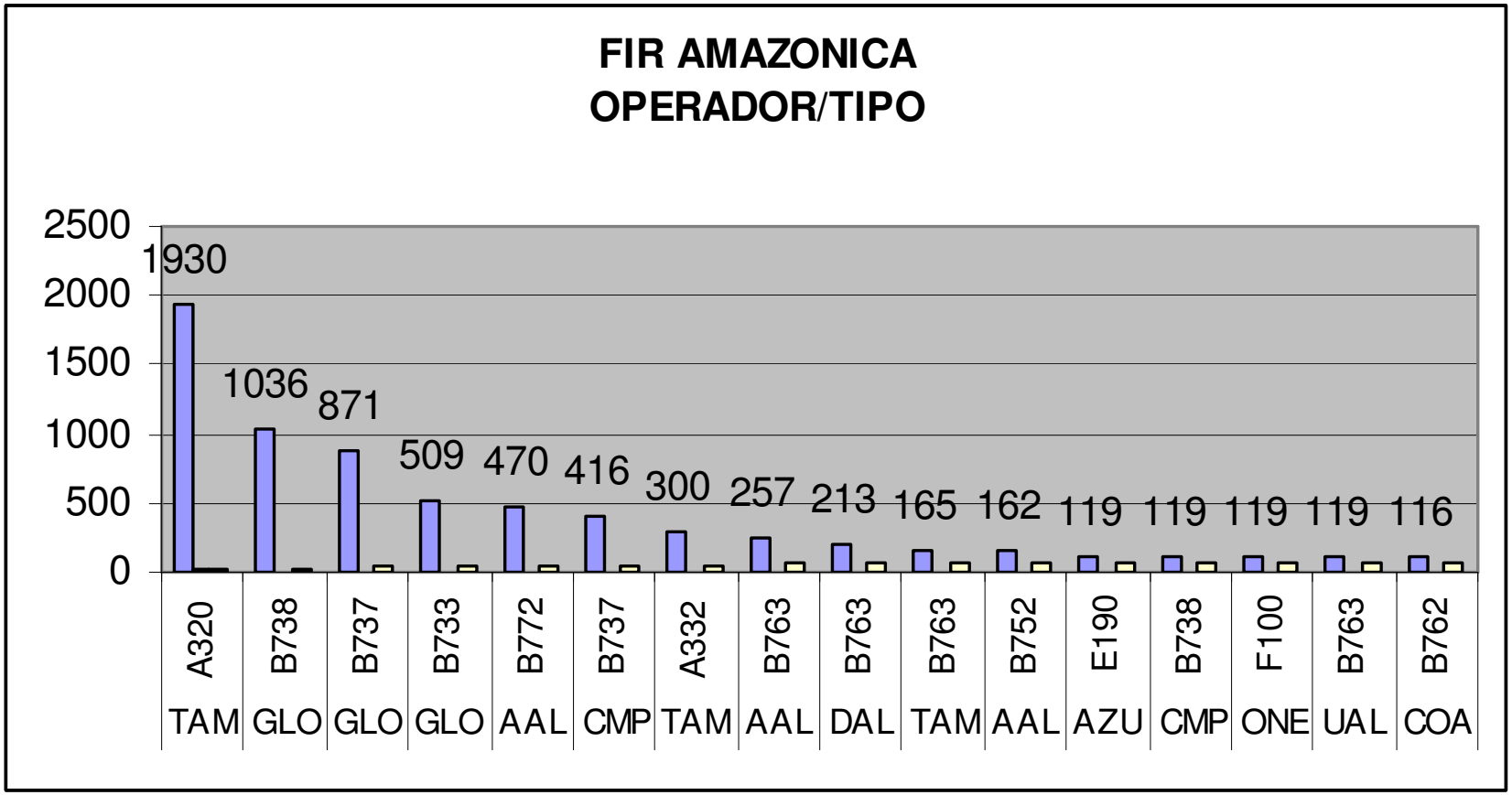

FIR AMAZONICA - RUTAS ATS
1400
1200
1000
800
600
400
200
0
1233
668
570
515
446
443
439
431
418
397
340
334
303
299
278
255
10,4%
5,7%
4,8%
4,4%
3,8%
3,8%
3,7%
3,7%
3,5%
3,4%
2,9%
2,8%
2,6%
2,5%
2,4%
2,2%
UW33
UL417
UW10
UW6
UZ21
UM409
UZ6
UA321
UM402
UW9
UA300
UL795
UA315
UL304
UZ2
UL655

FIR Amazónica

Pares de Ciudades servidos por cada Ruta ATS

UW33	KATL	SBFZ	13
	KATL Total		13
	KMIA	SBNT	2
	KMIA Total		2
	MTPP	SBRF	1
	MTPP Total		1
	SBBE	SBEG	119
		SBFZ	90
		SBSL	86
		SBSN	90
	SBBE Total		385
	SBBV	SBFZ	1
	SBBV Total		1
	SBEG	SBBE	95
		SBNT	1
		SBSL	2
		SBSN	91
	SBEG Total		189
	SBFZ	KATL	12
		SBBE	100
		SBBV	2
		SBEG	4
		SBIZ	1
		SBSL	120
		SKBO	2
		SMJP	1
		TJBQ	1

	SBFZ Total		243
	SBMN	SBBE	2
	SBMN Total		2
	SBRF	SBEG	1
	SBRF Total		1
	SBSL	SBBE	93
		SBFZ	124
		SBMQ	1
		SBSN	1
	SBSL Total		219
	SBSN	SBBE	83
		SBEG	90
	SBSN Total		173
	TTPP	SBNT	1
	TTPP Total		1
UW33 Total			1230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OPERADOR/TIPO
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2000
1500
1000
500
0
1930
1036
871
509
470
416
300
257
213
165
162
119
119
119
119
116
A320 TAM
B738 GLO
B737 GLO
B733 GLO
B772 AAL
B737 CMP
A332 TAM
B763 AAL
B763 DAL
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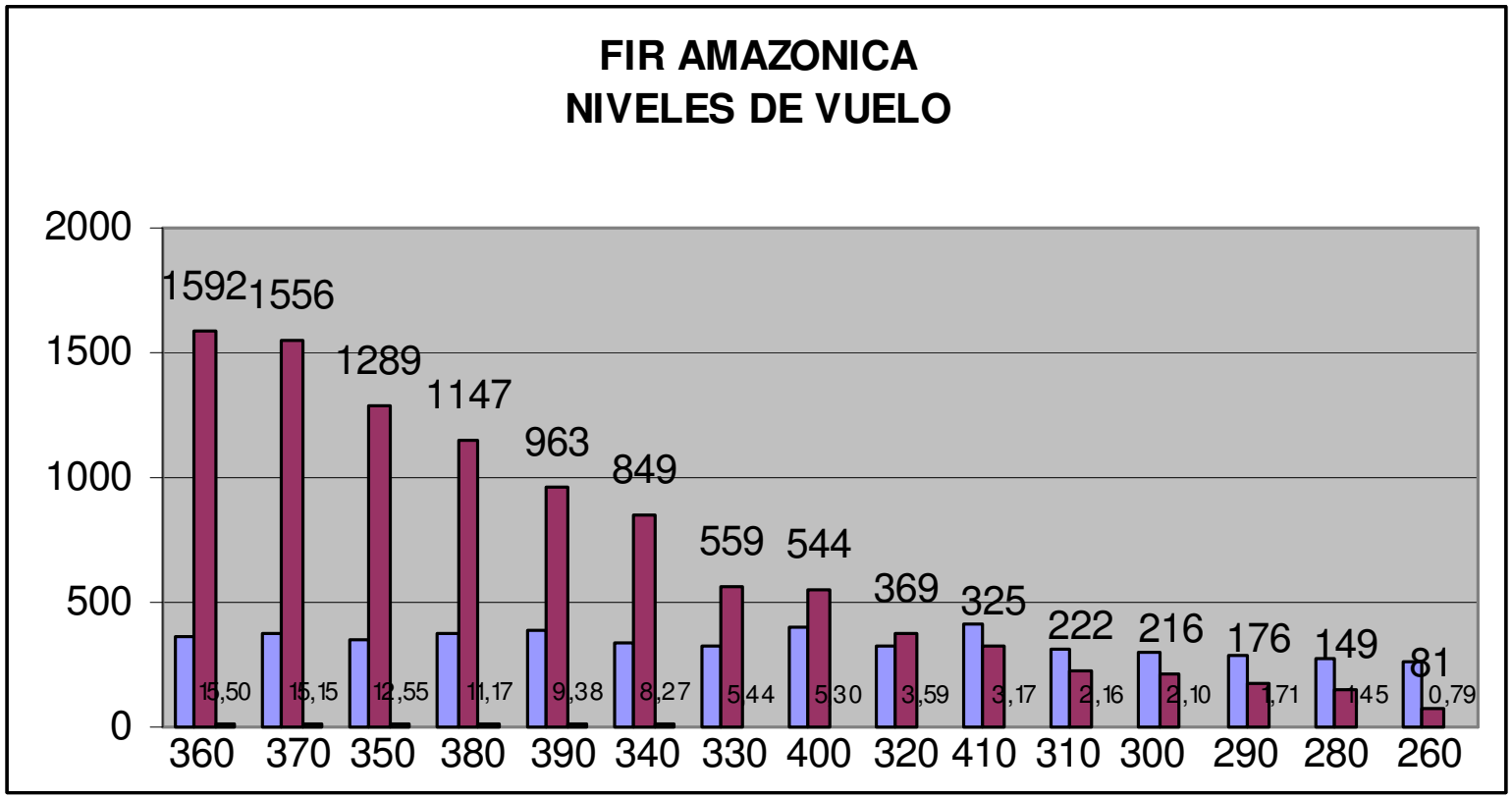
B752 AAL
E190 AZU
B738 CMP
F100 ONE
B763 UAL
B762 COA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NIVELES DE VUELO
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849
559
544
369
325
222
216
176
149
81
15,50
15,15
12,55
11,17
9,38
8,27
5,44
5,30
3,59
3,17
2,16
2,10
1,71
1,45
0,79
360
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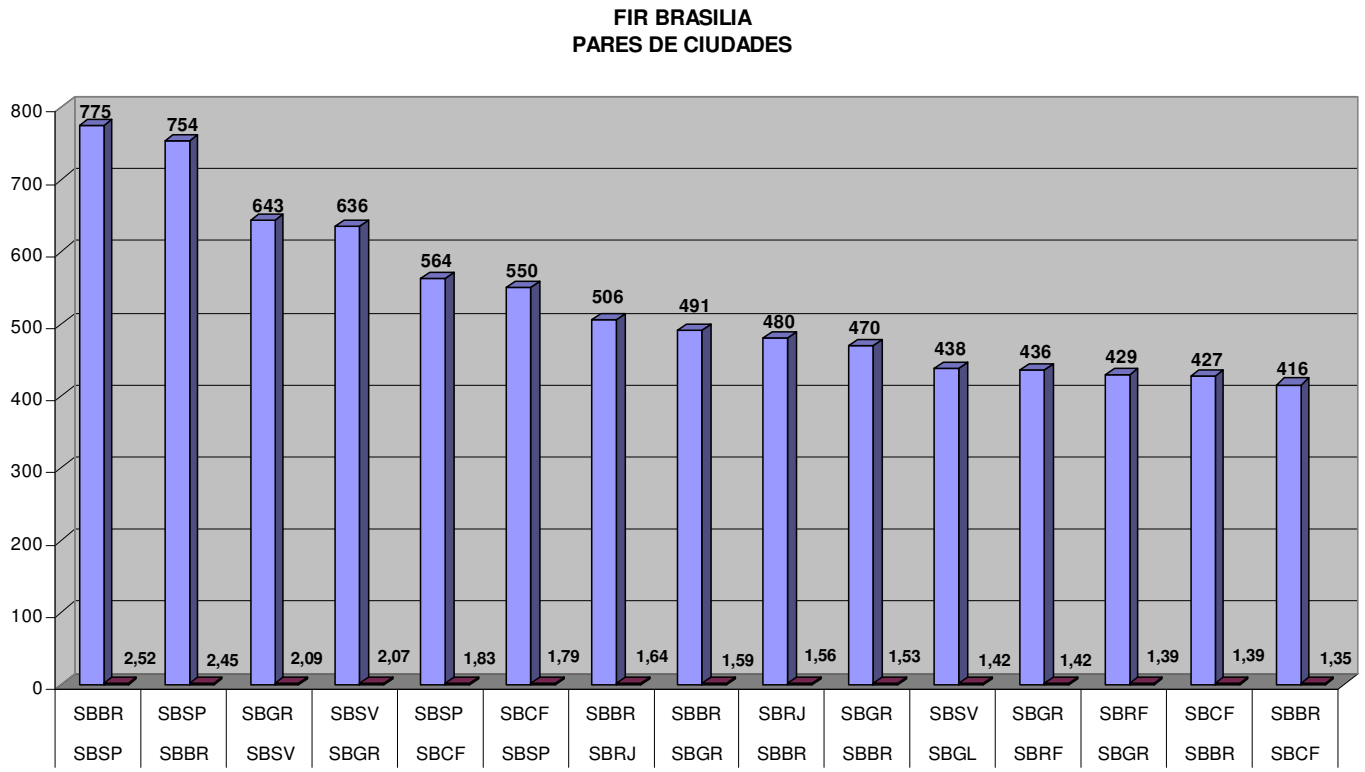
400
320
410
310
300
290
280
260

Apéndice H

FIR Brasilia



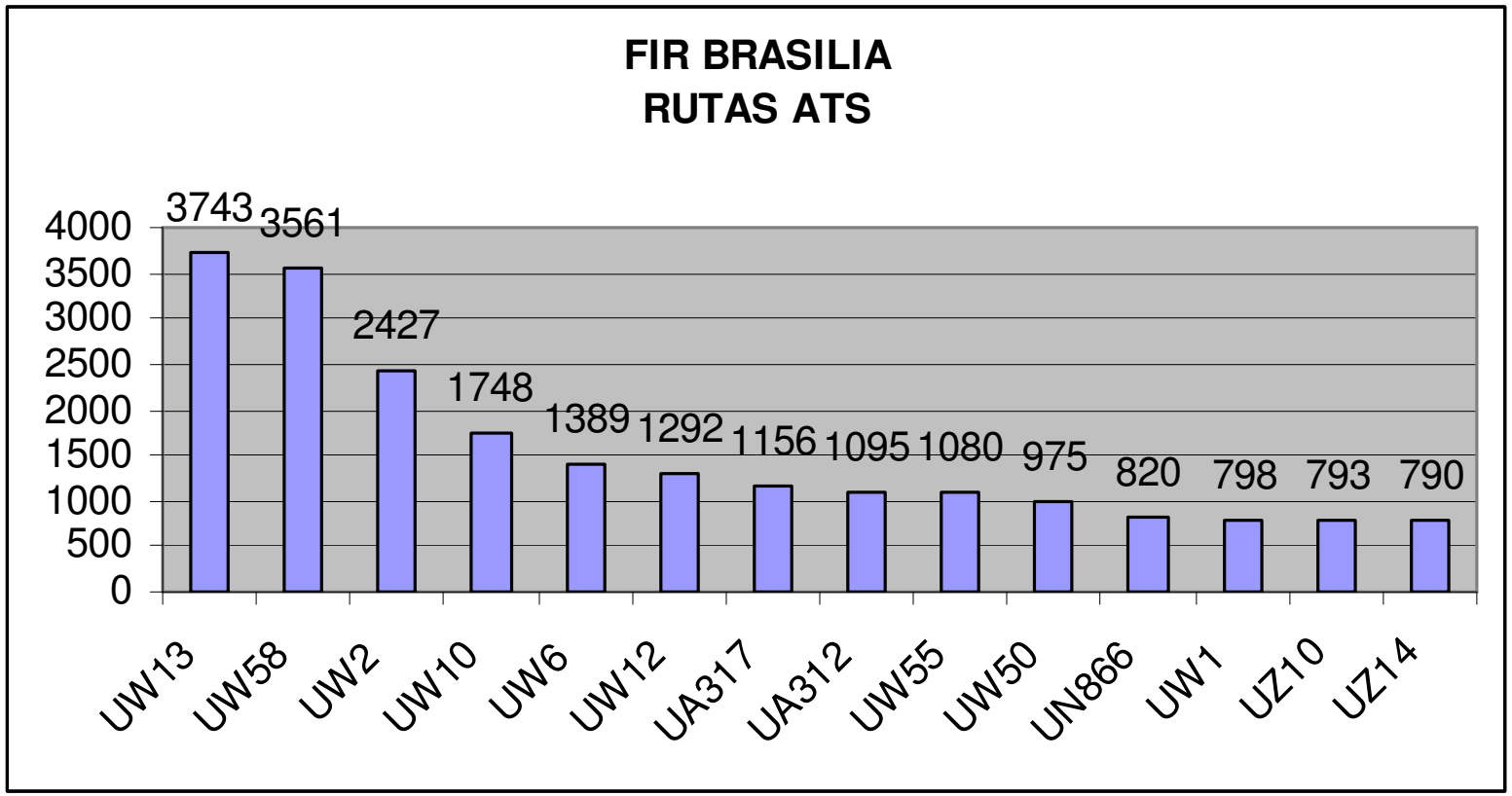
Análisis Red de Rutas – FIR BRASILIA

Rutas FIR BRASILIA – AIP Brasil	RNAV	"Convencionales"
Internacionales	20	5
Nacionales	23	26

AIP	Ruta ATS	Número de movimientos	Porcentual	Porcentual acumulado	Obs
UA312	UA312	1095	3,503%	3,503%	
UA317	UA317	1156	3,698%	7,200%	
UB554	UB554	146	0,467%	7,667%	
UB652	UB652	3	0,010%	7,677%	
UB688	UB688	90	0,288%	7,965%	
UL201	UL201	187	0,598%	8,563%	
UL206	UL206	133	0,425%	8,989%	
UL304	UL304	96	0,307%	9,296%	
	UL327	4	0,013%	9,308%	No existe en AIP
UL330		0	0,000%	9,308%	
UL335	UL335	16	0,051%	9,360%	
UL540	UL540	23	0,074%	9,433%	
UL655	UL655	161	0,515%	9,948%	
UL776	UL776	81	0,259%	10,207%	
UL795	UL795	278	0,889%	11,097%	
UM409	UM409	17	0,054%	11,151%	
UM417	UM417	12	0,038%	11,189%	
UM423	UM423	42	0,134%	11,324%	
UM654	UM654	172	0,550%	11,874%	

UM656	UM656	3	0,010%	11,883%	
UM782	UM782	187	0,598%	12,482%	
UM799	UM799	144	0,461%	12,942%	
UN741	UN741	584	1,868%	14,810%	
UN857	UN857	406	1,299%	16,109%	
UN866	UN866	820	2,623%	18,732%	
UN873	UN873	86	0,275%	19,007%	
UW1	UW1	798	2,553%	21,560%	
UW10	UW10	1748	5,591%	27,151%	
UW11	UW11	561	1,795%	28,946%	
UW12	UW12	1292	4,133%	33,078%	
UW13	UW13	3743	11,973%	45,052%	
UW15	UW15	277	0,886%	45,938%	
UW16		0	0,000%	45,938%	Verificar en AIP
UW2	UW2	2427	7,763%	53,701%	
UW22	UW22	12	0,038%	53,739%	
UW28	UW28	180	0,576%	54,315%	
UW29	UW29	97	0,310%	54,625%	
UW43	UW43	315	1,008%	55,633%	
UW45	UW45	40	0,128%	55,761%	
UW47	UW47	27	0,086%	55,847%	
UW48	UW48	22	0,070%	55,918%	
	UW49	29	0,093%	56,010%	No existe en AIP
UW5	UW5	12	0,038%	56,049%	
UW50	UW50	975	3,119%	59,168%	
UW51	UW51	8	0,026%	59,193%	
UW52	UW52	2	0,006%	59,200%	
UW54	UW54	180	0,576%	59,775%	
UW55	UW55	1080	3,455%	63,230%	

UW58	UW58	3561	11,391%	74,621%
UW59	UW59	136	0,435%	75,056%
UW6	UW6	1389	4,443%	79,499%
UW62	UW62	153	0,489%	79,988%
UW9	UW9	450	1,439%	81,428%
UZ1	UZ1	479	1,532%	82,960%
UZ10	UZ10	793	2,537%	85,497%
UZ13	UZ13	33	0,106%	85,602%
UZ14	UZ14	790	2,527%	88,129%
UZ15	UZ15	17	0,054%	88,184%
UZ16	UZ16	452	1,446%	89,630%
UZ17	UZ17	535	1,711%	91,341%
UZ18	UZ18	77	0,246%	91,587%
UZ2	UZ2	226	0,723%	92,310%
UZ21	UZ21	419	1,340%	93,650%
UZ22	UZ22	258	0,825%	94,476%
UZ23	UZ23	19	0,061%	94,536%
UZ24	UZ24	206	0,659%	95,195%
UZ25	UZ25	215	0,688%	95,883%
UZ26	UZ26	173	0,553%	96,437%
UZ27	UZ27	73	0,234%	96,670%
UZ28	UZ28	13	0,042%	96,712%
UZ29	UZ29	1	0,003%	96,715%
UZ3	UZ3	194	0,621%	97,335%
UZ4	UZ4	37	0,118%	97,454%
UZ5	UZ5	326	1,043%	98,497%
UZ6	UZ6	469	1,500%	99,997%
UZ8	UZ8	1	0,003%	100,000%


FIR BRASILIA
RUTAS ATS
4000
3500
3000
2500
2000
1500
1000
500
0
3743
3561
2427
1748
1389
1292
1156
1095
1080
975
820
798
793
790
UW13
UW58
UW2
UW10
UW6
UW12
UA317
UA312
UW55
UW50
UN866
UW1
UZ10
UZ14

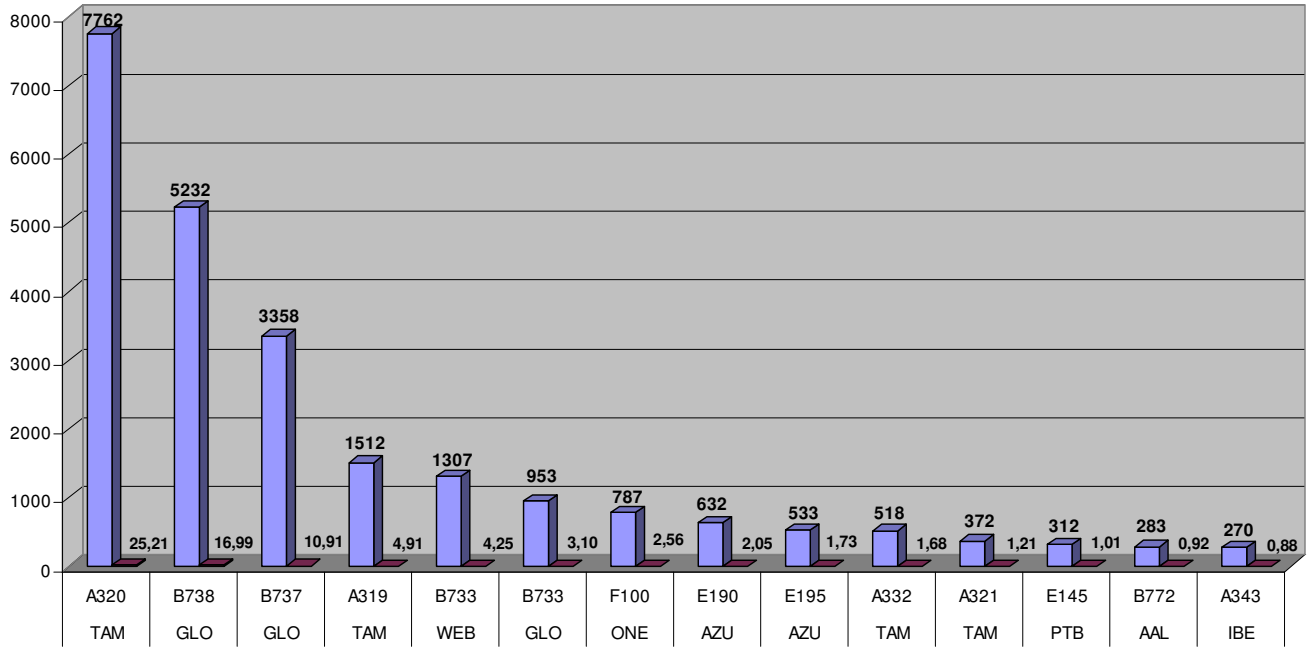
FIR Brasilia

Pares de Ciudades servidos por Ruta ATS

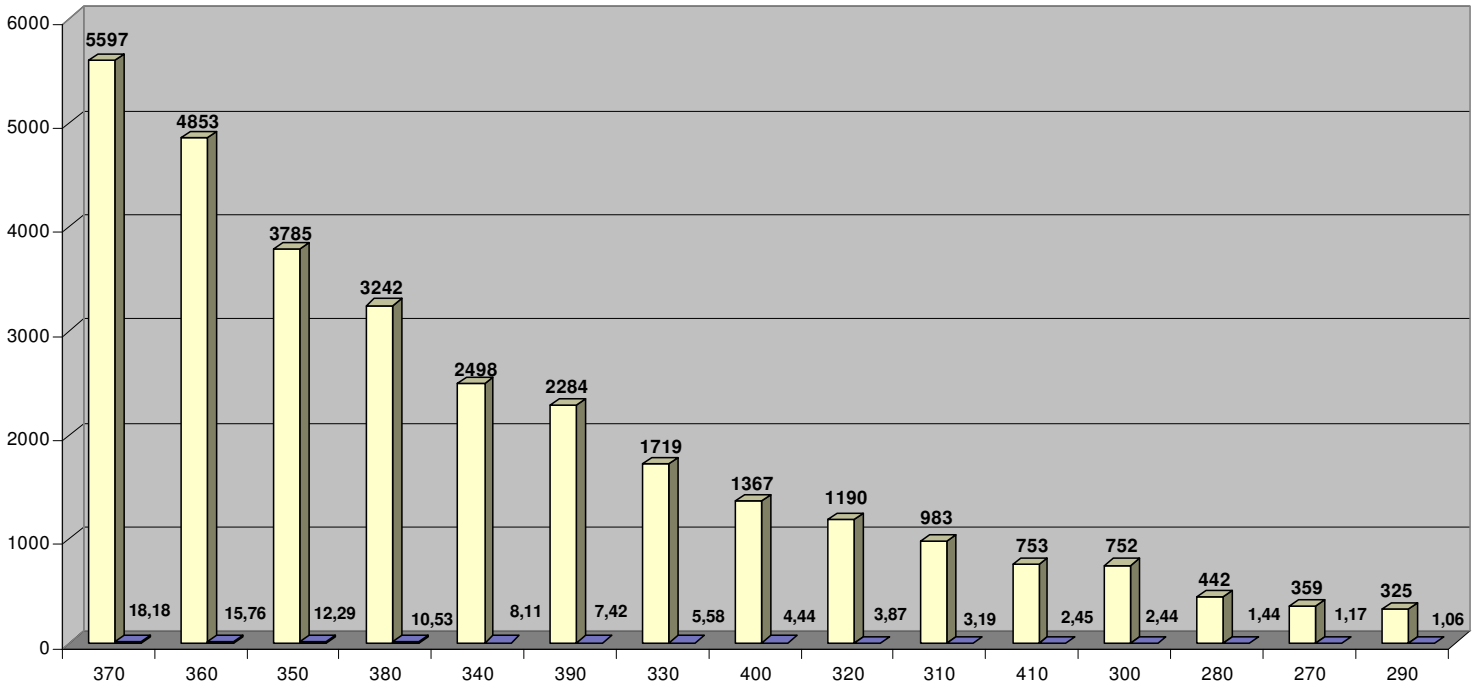
UW2	SBAN	SBBR	1
	SBAN Total		1
	SBGR	CYYZ	10
		KATL	29
		KEWR	30
		KIAD	29
		KIAH	1
		KJFK	125
		KMIA	52
		KORD	29
		KSAV	2
		SBAN	2
		SBBE	55
		SBBR	491
		SBBV	1
		SBCN	3
		SBEG	1
		SBGO	105
		SBRP	31
		SBSL	30
		SBUL	3
		SNZR	1
		TBPB	1
		TJSJ	1
	SBGR Total		1032
	SBGW	SBBR	2
	SBGW Total		2
	SBJD	SBBE	1
		SBBR	13
		SBCN	1
		SBPJ	2
		SBUL	2
		SNLZ	1
		SSQZ	1

	SBJD Total		21
	SBKP	KMEM	6
		SBBR	117
		SVMI	10
	SBKP Total		133
	SBMT	SBRP	2
		SVMI	5
	SBMT Total		7
	SBSJ	SBBR	19
		SBPJ	3
	SBSJ Total		22
	SBSP	SBAN	1
		SBAX	3
		SBBE	3
		SBBR	775
		SBBV	3
		SBBW	2
		SBCN	3
		SBFU	1
		SBGO	211
		SBRP	32
		SBSL	2
		SBUL	158
		SBUR	1
		SWGN	2
		SWUA	1
	SBSP Total		1198
	SBYS	SBBR	9
	SBYS Total		9
	SDCO	SBAX	1
	SDCO Total		1
	SDSC	SBBR	1
	SDSC Total		1
UW2 Total			2427

FIR BRASILIA
OPERADOR / TIPO

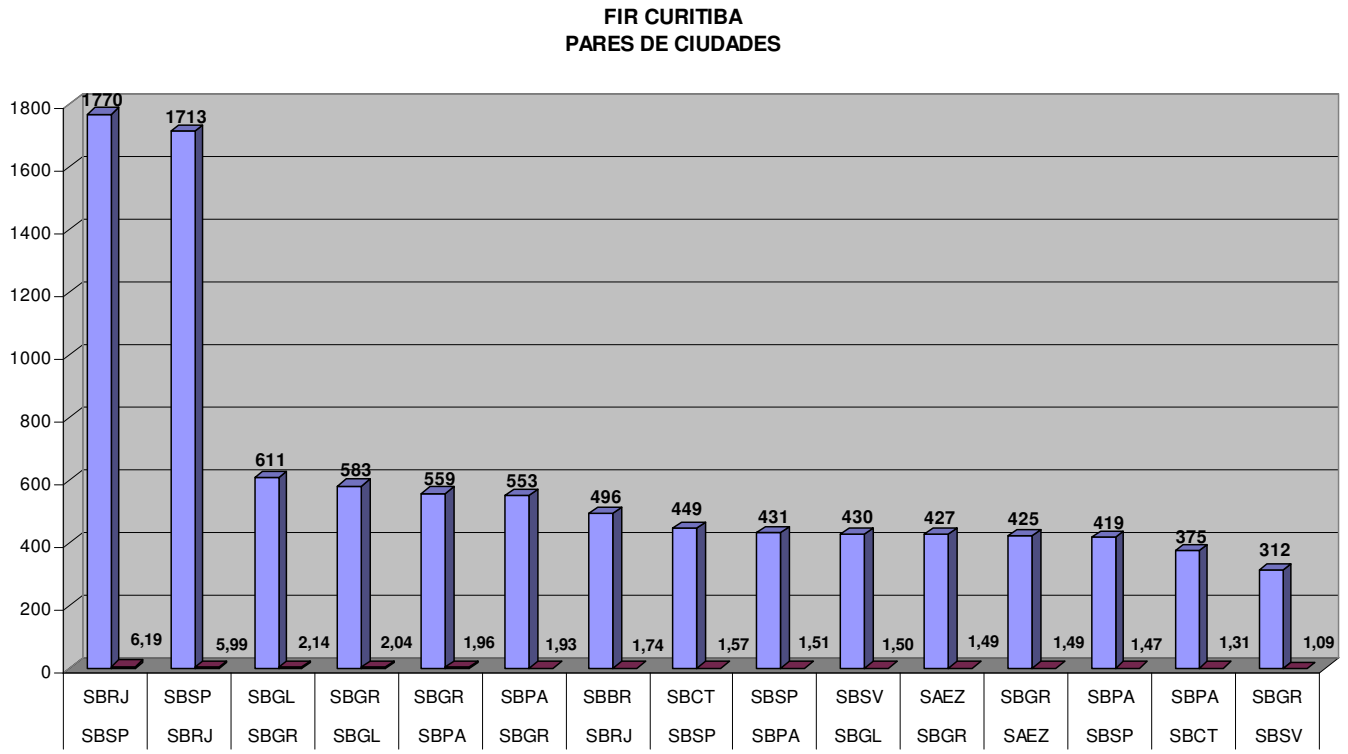


FIR BRASILIA
NÍVELES DE VUELO



Apéndice I

FIR Curitiba



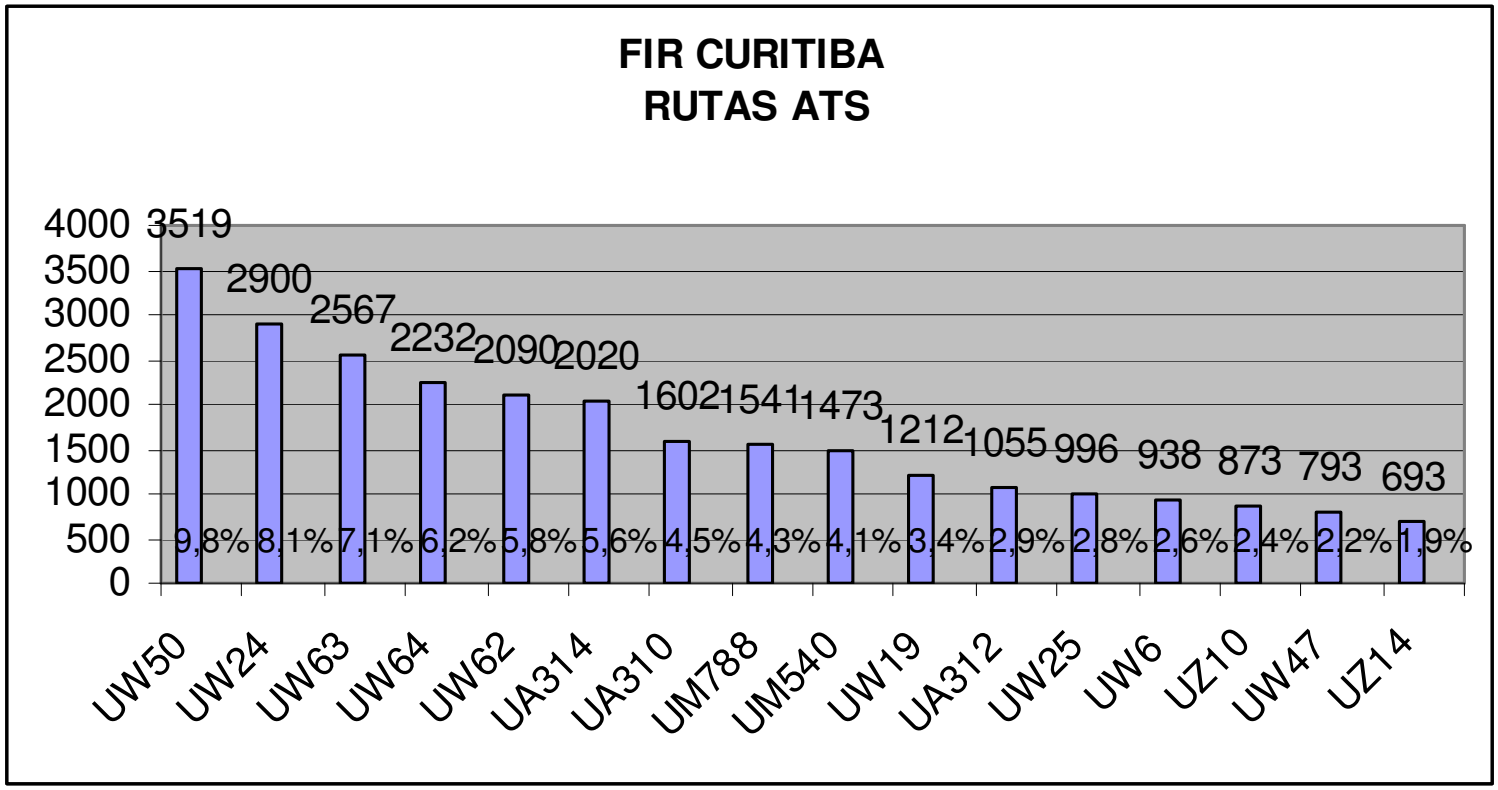
Análisis Red de Rutas – FIR CURITIBA

Rutas FIR CURITIBA – AIP Brasil	RNAV	"Convencionales"
Internacionales	23	13
Nacionales	10	22

AIP	aerovías	número movimientos	Porcentaje	Porcentaje acumulada
UA305	UA305	25	0,070%	0,070%
UA308	UA308	203	0,565%	0,635%
UA309	UA309	41	0,114%	0,749%
UA310	UA310	1602	4,461%	5,210%
UA312	UA312	1055	2,938%	8,148%
UA314	UA314	2020	5,625%	13,773%
UA317	UA317	579	1,612%	15,386%
UA432	UA432	28	0,078%	15,464%
UB554	UB554	46	0,128%	15,592%
UB688	UB688	130	0,362%	15,954%
UB695	UB695	32	0,089%	16,043%
UG680	UG680	14	0,039%	16,082%
UL216	UL216	2	0,006%	16,087%
UL224	UL224	57	0,159%	16,246%
UL301	UL301	62	0,173%	16,419%
UL310	UL310	207	0,576%	16,995%
UL324	UL324	5	0,014%	17,009%
UL327	UL327	533	1,484%	18,493%
UL340	UL340	50	0,139%	18,633%
UL655	UL655	187	0,521%	19,153%
UM400	UM400	213	0,593%	19,747%
UM415	UM415	290	0,808%	20,554%
UM540	UM540	1473	4,102%	24,656%

UM544		0	0,000%	24,656%
UM548	UM548	544	1,515%	26,171%
UM654	UM654	12	0,033%	26,204%
UM656	UM656	9	0,025%	26,229%
UM671	UM671	639	1,779%	28,009%
UM782	UM782	496	1,381%	29,390%
UM788	UM788	1541	4,291%	33,681%
UM792	UM792	158	0,440%	34,121%
UM799	UM799	152	0,423%	34,545%
UN741	UN741	81	0,226%	34,770%
UN857	UN857	643	1,791%	36,561%
	UN866	9	0,025%	36,586%
UN873	UN873	224	0,624%	37,210%
UR563	UR563	5	0,014%	37,224%
UW11	UW11	299	0,833%	38,056%
UW19	UW19	1212	3,375%	41,431%
UW21	UW21	239	0,666%	42,097%
UW24	UW24	2900	8,076%	50,173%
UW25	UW25	996	2,774%	52,946%
UW28	UW28	162	0,451%	53,397%
UW29	UW29	132	0,368%	53,765%
UW45	UW45	263	0,732%	54,497%
UW47	UW47	793	2,208%	56,706%
UW48	UW48	228	0,635%	57,341%
UW49	UW49	197	0,549%	57,889%
UW5	UW5	132	0,368%	58,257%
UW50	UW50	3519	9,799%	68,056%
UW51	UW52	33	0,092%	68,148%
UW52	UW58	5	0,014%	68,162%
UW6	UW6	938	2,612%	70,774%
UW61	UW61	419	1,167%	71,941%
UW62	UW62	2090	5,820%	77,761%
UW63	UW63	2567	7,148%	84,909%
UW64	UW64	2232	6,216%	91,125%
UW65	UW65	109	0,304%	91,429%

UW66	UW66	244	0,679%	92,108%
UZ1	UZ1	185	0,515%	92,623%
UZ10	UZ10	873	2,431%	95,054%
UZ14	UZ14	693	1,930%	96,984%
UZ15		0	0,000%	96,984%
UZ18	UZ18	50	0,139%	97,123%
UZ21	UZ21	395	1,100%	98,223%
UZ22	UZ22	293	0,816%	99,039%
UZ28	UZ28	5	0,014%	99,053%
UZ4	UZ4	161	0,448%	99,502%
UZ5	UZ5	179	0,498%	100,000%


FIR CURITIBA
RUTAS ATS
4000
3500
3000
2500
2000
1500
1000
500
0
3519
2900
2567
2232
2090
2020
1602
1541
1473
1212
1055
996
938
873
793
693
9,8%
8,1%
7,1%
6,2%
5,8%
5,6%
4,5%
4,3%
4,1%
3,4%
2,9%
2,8%
2,6%
2,4%
2,2%
1,9%
UW50
UW24
UW63
UW64
UW62
UA314
UA310
UM788
UM540
UW19
UA312
UW25
UW6
UZ10
UW47
UZ14

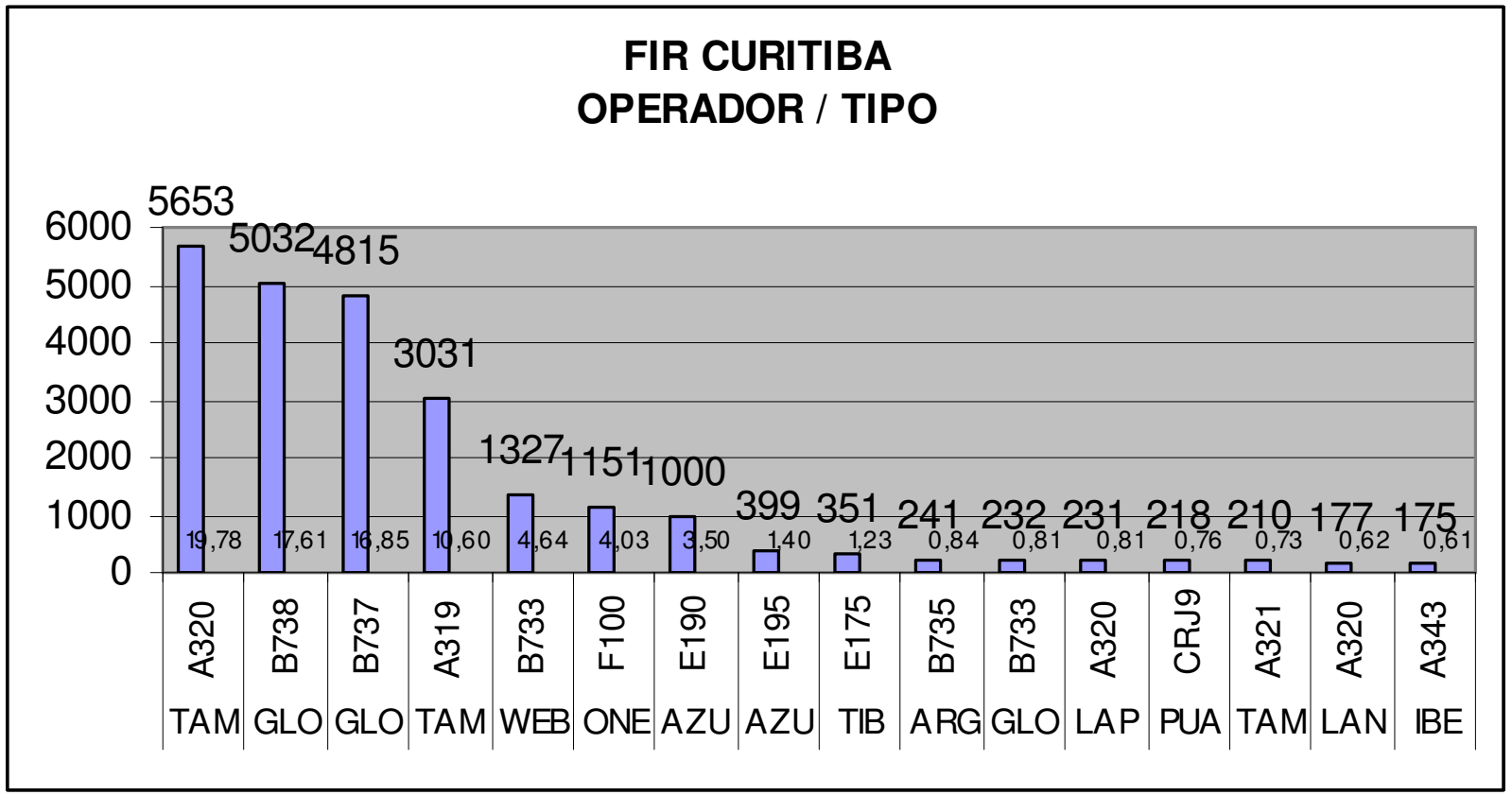
FIR Curitiba

Pares de Ciudades servidos por Ruta ATS

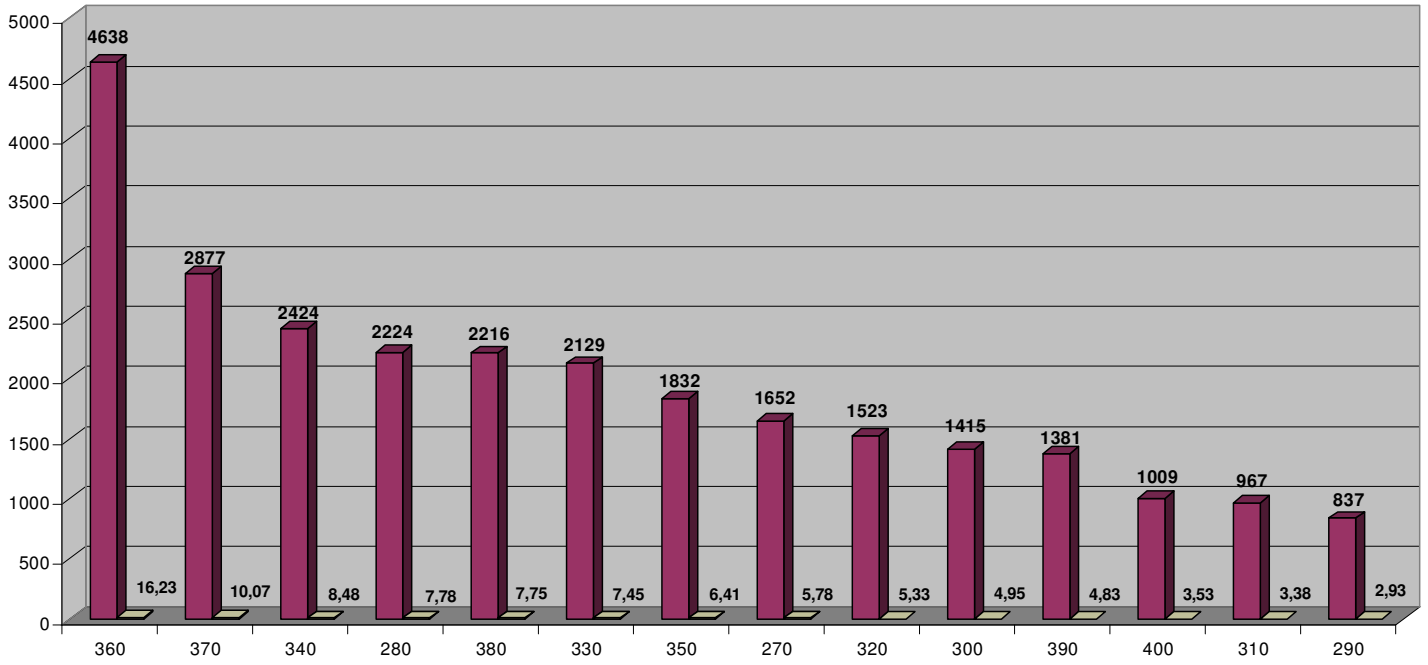
UW50	EHAM	SBGR	2
	EHAM Total		2
	FAJS	SBGR	28
	FAJS Total		28
	FNLU	SBGR	9
	FNLU Total		9
	LEBL	SAEZ	5
	LEBL Total		5
	LEMD	SAEZ	14
		SBGR	5
	LEMD Total		19
	LFPG	SBGL	19
	LFPG Total		19
	LIRF	SAEZ	16
	LIRF Total		16
	LPPT	SBGR	6
	LPPT Total		6
	LSZH	SBGR	17
	LSZH Total		17
	OMDB	SBGR	30
	OMDB Total		30
	SBAR	SBGR	42
	SBAR Total		42
	SBCB	SBKP	5
	SBCB Total		5
	SBGL	SBCG	7
		SBCT	189
		SBFI	88
		SBGR	583
		SBKP	164
		SBSJ	6
		SBSP	1
		SPIM	17

SBGL Total		1055
SBGR	SBCG	118
SBGR Total		118
SBJP	SBGR	22
SBJP Total		22
SBJR	SBJD	2
SBJR Total		2
SBKP	SBCG	54
SBKP Total		54
SBMO	SBGR	66
SBMO Total		66
SBMT	SBDN	3
SBMT Total		3
SBPS	SAEZ	2
	SBGR	14
SBPS Total		16
SBRF	SBGR	229
SBRF Total		229
SBRJ	SBAQ	3
	SBCT	143
	SBGR	222
	SBJD	5
	SBKP	203
	SBSJ	3
	SBSR	24
	SBYS	2
	SDCO	3
SBRJ Total		608
SBSP	SBAS	4
	SBCG	147
SBSP Total		151
SBSV	SAEZ	3
	SBAF	2
	SBGR	312
	SBKP	3
SBSV Total		320

	SBTC	SBGR	2
	SBTC Total		2
	SBVT	SBCT	2
		SBGL	109
		SBGR	89
		SBKP	24
		SBRJ	202
		SBSP	249
	SBVT Total		675
UW50 Total			3519

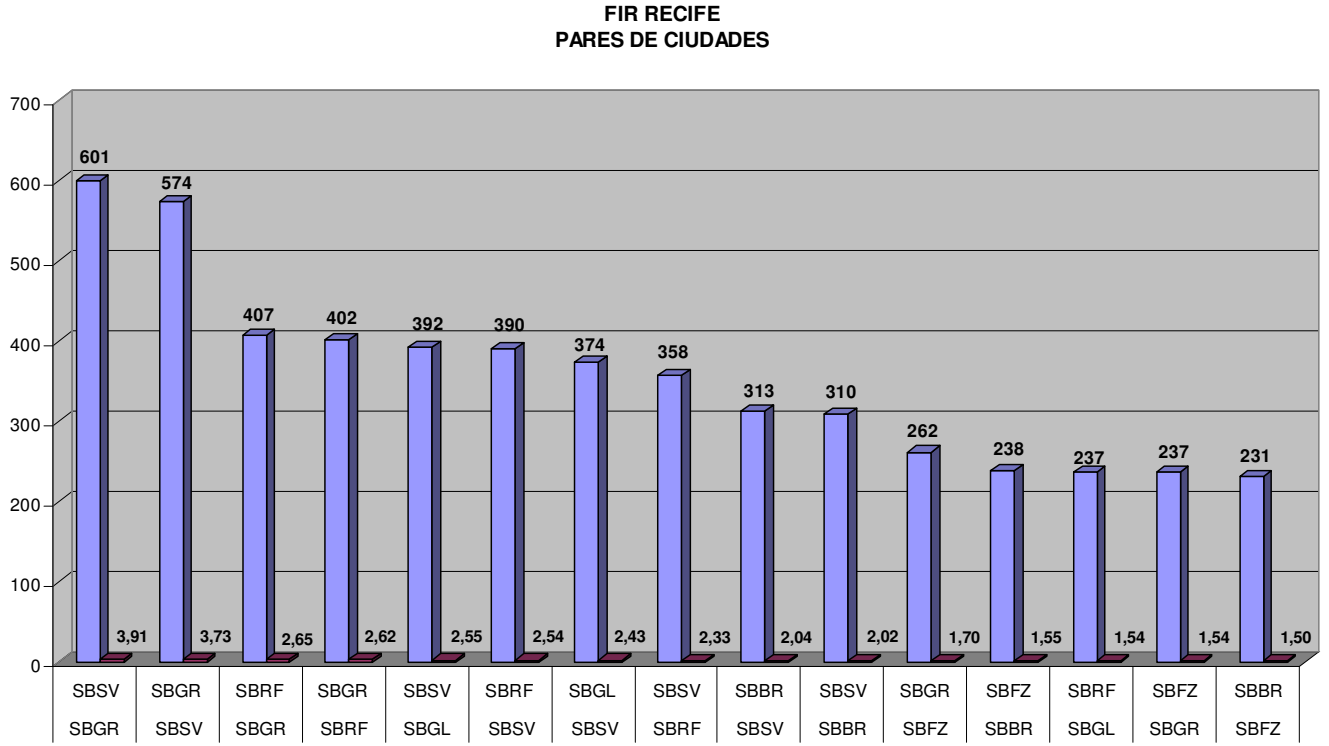

FIR CURITIBA
OPERADOR / TIPO
6000
5000
4000
3000
2000
1000
0
5653
5032
4815
3031
1327
1151
1000
399
351
241
232
231
218
210
177
175
19,78
17,61
16,85
10,60
4,64
4,03
3,50
1,40
1,23
0,84
0,81
0,81
0,76
0,73
0,62
0,61
A320 TAM
B738 GLO
B737 GLO
A319 TAM
B733 WEB
F100 ONE
E190 AZU
E195 AZU
E175 TIB
B735 ARG
B733 GLO
A320 LAP
CRJ9 PUA
A321 TAM
A320 LAN
A343 IBE

FIR CURITIBA
NIVELES DE VUELO



Apéndice J

FIR Recife

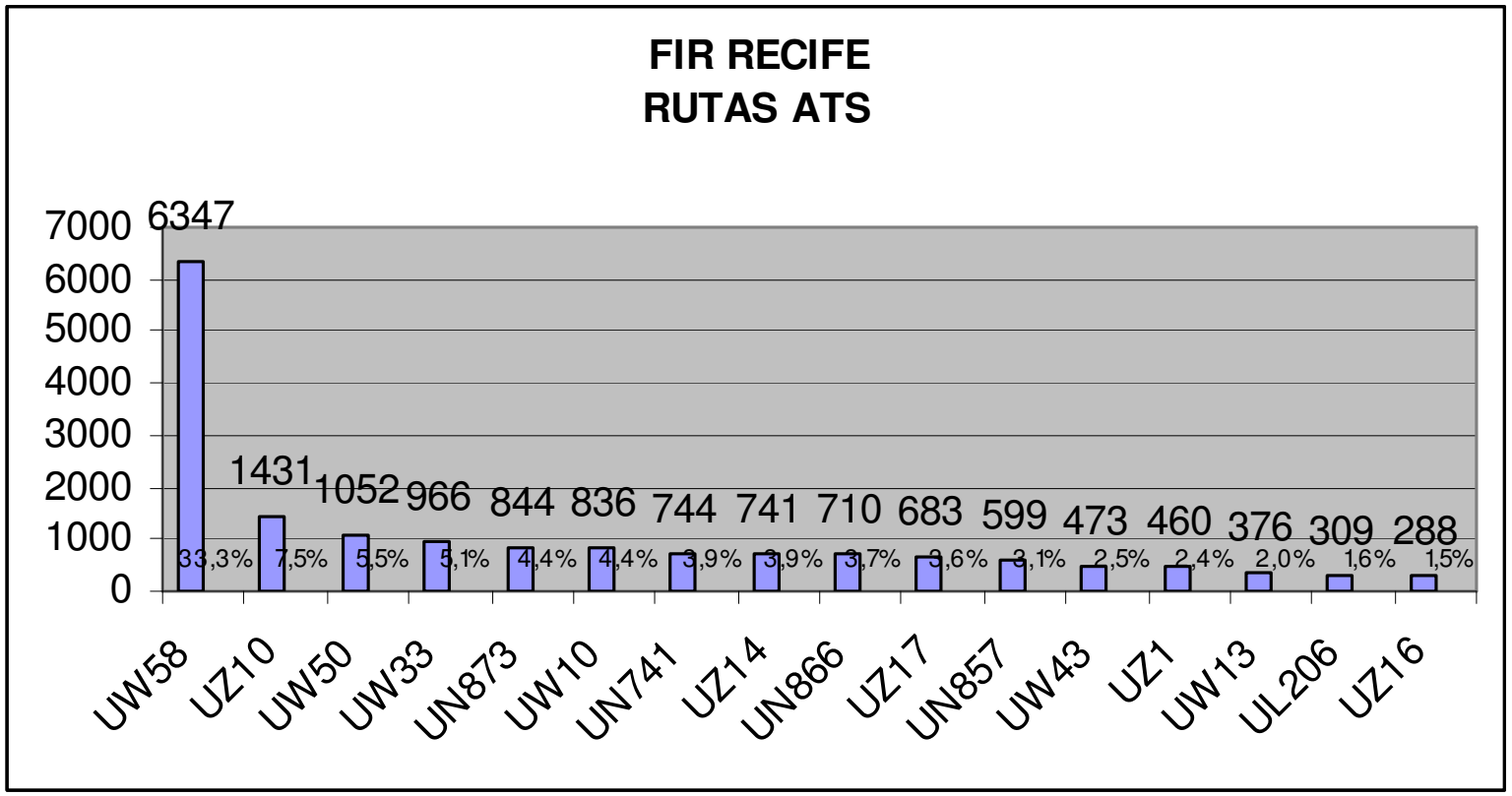


Análisis Red de Rutas – FIR RECIFE

Rutas FIR RECIFE – AIP Brasil	RNAV	"Convencionales"
Internacionales	6	2
Nacionales	15	11

AIP	AWY	número movimientos	Porcentaje	Porcentaje acumulado	OBS
UB623	UB623	279	1,462%	1,462%	
UL206	UL206	309	1,619%	3,080%	
	UL335	1	0,005%	3,086%	No está ubicada en la FIR RE
	UL340	29	0,152%	3,238%	No está ubicada en la FIR RE
	UL375	6	0,031%	3,269%	No está ubicada en la FIR RE
	UL695	18	0,094%	3,363%	No está ubicada en la FIR RE
UM654	UM654	161	0,843%	4,207%	
UN741	UN741	744	3,898%	8,105%	
UN857	UN857	599	3,138%	11,243%	
UN866	UN866	710	3,720%	14,962%	
UN873	UN873	844	4,422%	19,384%	
UR551	UR551	212	1,111%	20,495%	
UW10	UW10	836	4,380%	24,874%	
UW13	UW13	376	1,970%	26,844%	
UW14	UW14	50	0,262%	27,106%	
UW23	UW23	73	0,382%	27,488%	
UW33	UW33	966	5,061%	32,549%	
UW42	UW42	1	0,005%	32,554%	
UW43	UW43	473	2,478%	35,032%	
UW44	UW44	53	0,278%	35,310%	
UW5	UW5	1	0,005%	35,315%	
UW50	UW50	1052	5,511%	40,827%	
UW58	UW58	6347	33,251%	74,078%	
UZ1	UZ1	460	2,410%	76,488%	

UZ10	UZ10	1431	7,497%	83,985%
UZ14	UZ14	741	3,882%	87,867%
UZ15	UZ15	13	0,068%	87,935%
UZ16	UZ16	288	1,509%	89,444%
UZ17	UZ17	683	3,578%	93,022%
UZ18	UZ18	125	0,655%	93,677%
UZ19	UZ19	140	0,733%	94,410%
UZ2	UZ2	278	1,456%	95,867%
UZ20	UZ20	48	0,251%	96,118%
UZ27	UZ27	137	0,718%	96,836%
UZ3	UZ3	178	0,933%	97,768%
UZ4	UZ4	29	0,152%	97,920%
UZ5	UZ5	235	1,231%	99,151%
UZ7	UZ7	162	0,849%	100,000%


FIR RECIFE
RUTAS ATS
7000
6000
5000
4000
3000
2000
1000
0
6347
1431
1052
966
844
836
744
741
710
683
599
473
460
376
309
288
33,3%
7,5%
5,5%
5,1%
4,4%
4,4%
3,9%
3,9%
3,7%
3,6%
3,1%
2,5%
2,4%
2,0%
1,6%
1,5%
UW58
UZ10
UW50
UW33
UN873
UW10
UN741
UZ14
UN866
UZ17
UN857
UW43
UZ1
UW13
UL206
UZ16

FIR Recife

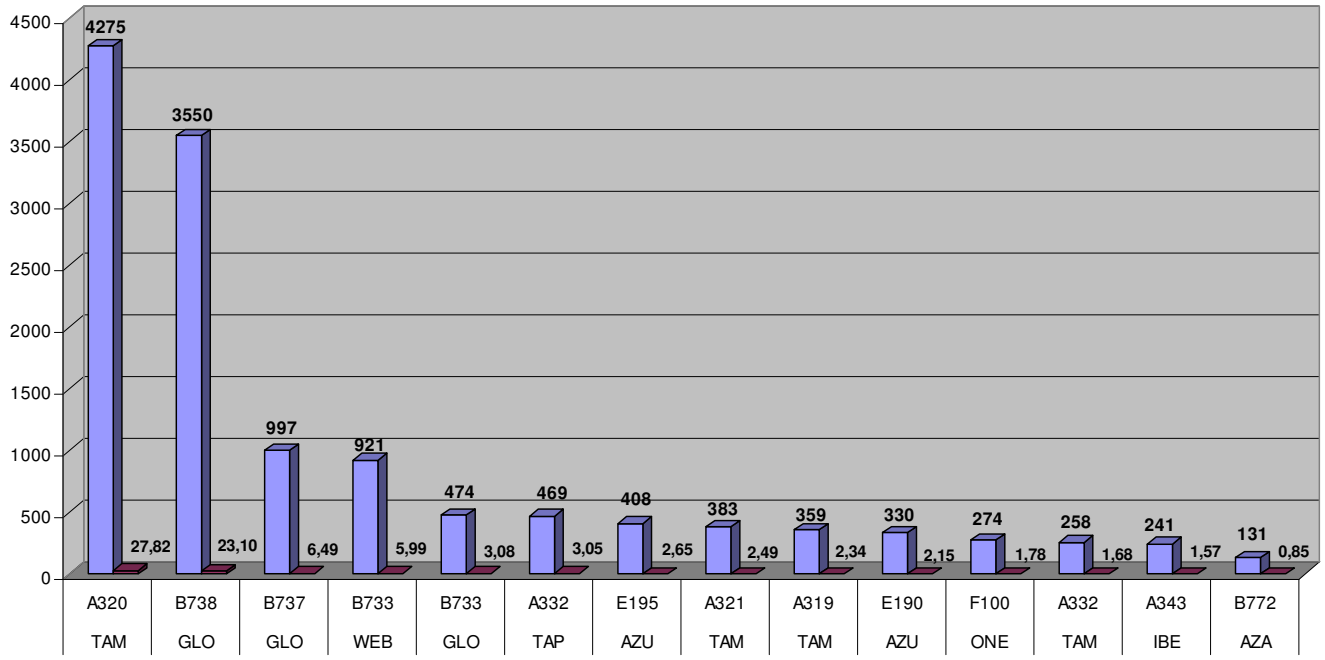
Pares de Ciudades servidos por Ruta ATS

UW50	EHAM	SBGR	2
	EHAM Total		2
	FAJS	SBGR	28
	FAJS Total		28
	FNLU	SBGR	9
	FNLU Total		9
	LEBL	SAEZ	5
	LEBL Total		5
	LEMD	SAEZ	14
		SBGR	5
	LEMD Total		19
	LFPG	SBGL	19
	LFPG Total		19
	LIRF	SAEZ	16
	LIRF Total		16
	LPPT	SBGR	6
	LPPT Total		6
	LSZH	SBGR	17
	LSZH Total		17
	OMDB	SBGR	30
	OMDB Total		30
	SBAR	SBGR	42
	SBAR Total		42
	SBCB	SBKP	5
	SBCB Total		5
	SBGL	SBCG	7
		SBCT	189
		SBFI	88
		SBGR	583
		SBKP	164
		SBSJ	6
		SBSP	1
		SPIM	17

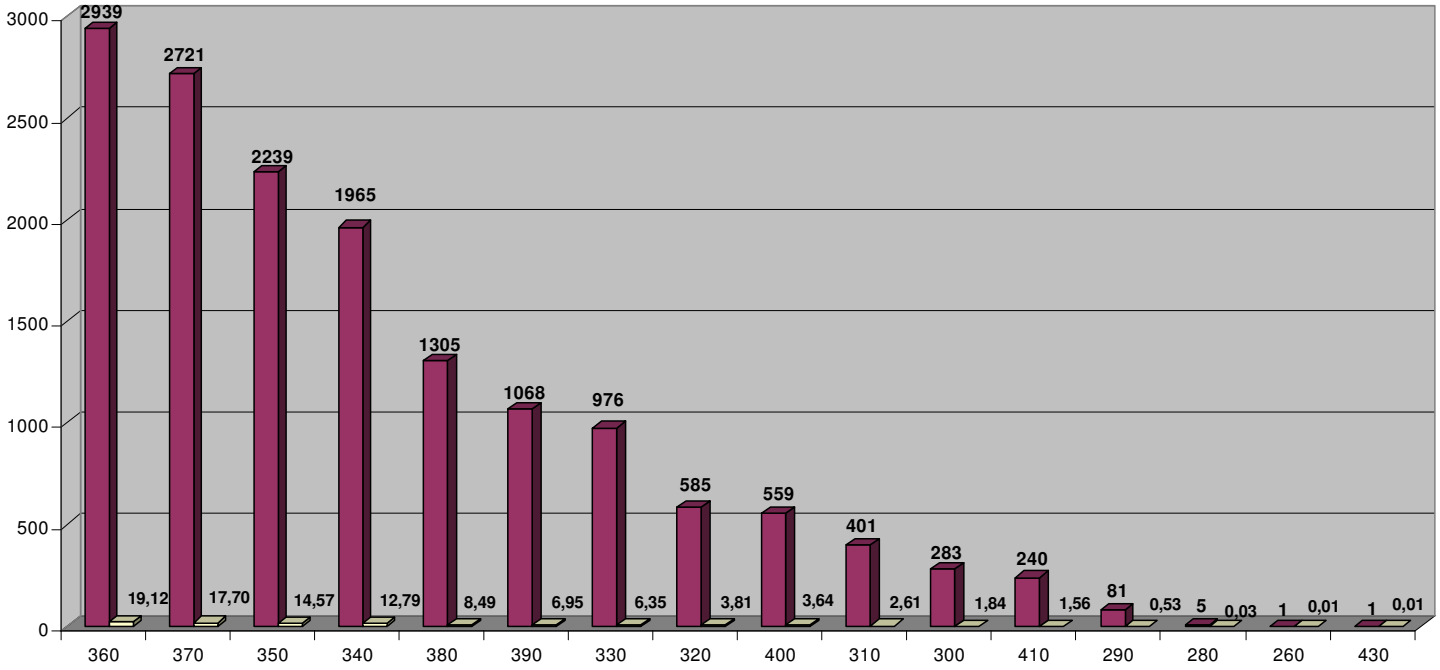
SBGL Total		1055
SBGR	SBCG	118
SBGR Total		118
SBJP	SBGR	22
SBJP Total		22
SBJR	SBJD	2
SBJR Total		2
SBKP	SBCG	54
SBKP Total		54
SBMO	SBGR	66
SBMO Total		66
SBMT	SBDN	3
SBMT Total		3
SBPS	SAEZ	2
	SBGR	14
SBPS Total		16
SBRF	SBGR	229
SBRF Total		229
SBRJ	SBAQ	3
	SBCT	143
	SBGR	222
	SBJD	5
	SBKP	203
	SBSJ	3
	SBSR	24
	SBYS	2
	SDCO	3
SBRJ Total		608
SBSP	SBAS	4
	SBCG	147
SBSP Total		151
SBSV	SAEZ	3
	SBAF	2
	SBGR	312
	SBKP	3
SBSV Total		320

	SBTC	SBGR	2
	SBTC Total		2
	SBVT	SBCT	2
		SBGL	109
		SBGR	89
		SBKP	24
		SBRJ	202
		SBSP	249
	SBVT Total		675
UW50 Total			3519

FIR RECIFE
OPERADOR / TIPO



FIR RECIFE
NIVELES DE VUELO

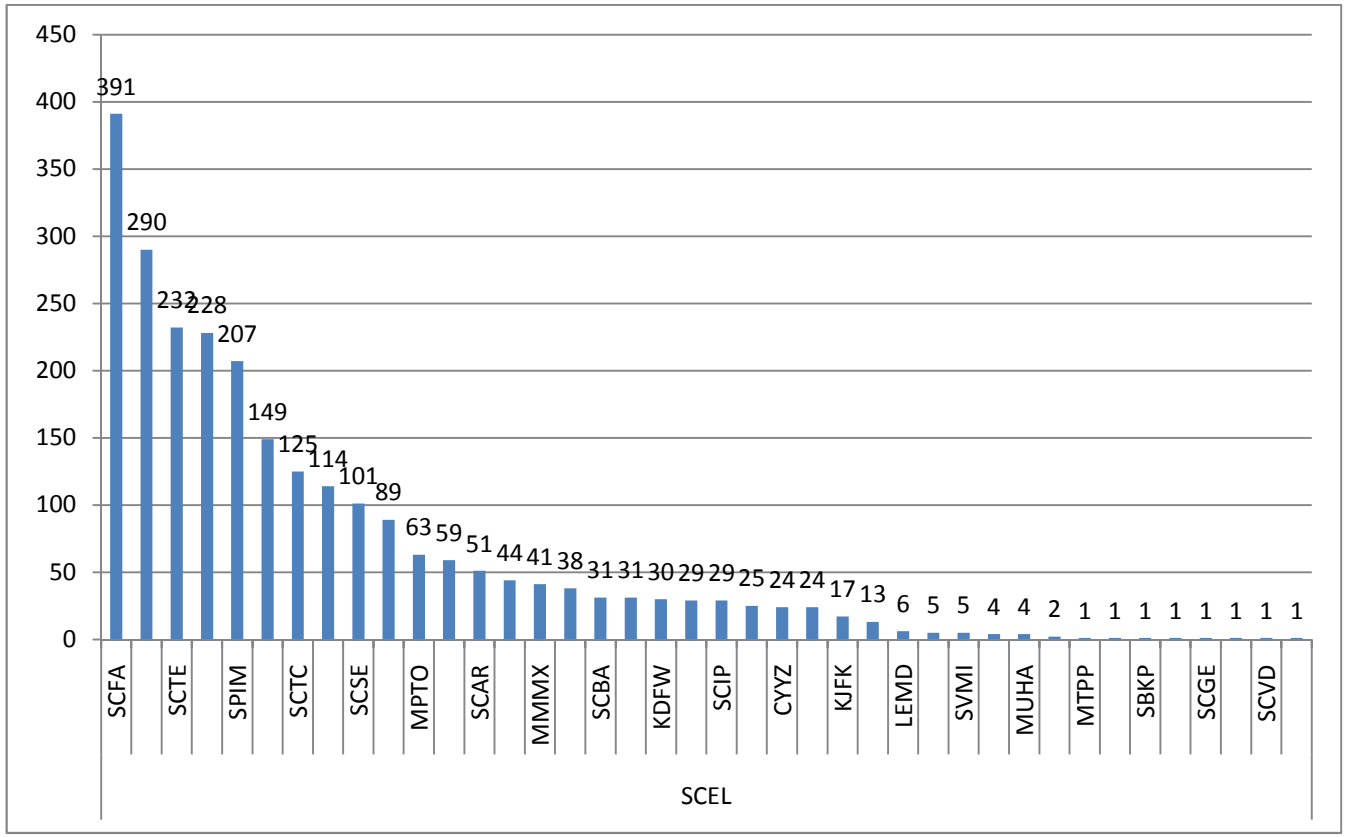


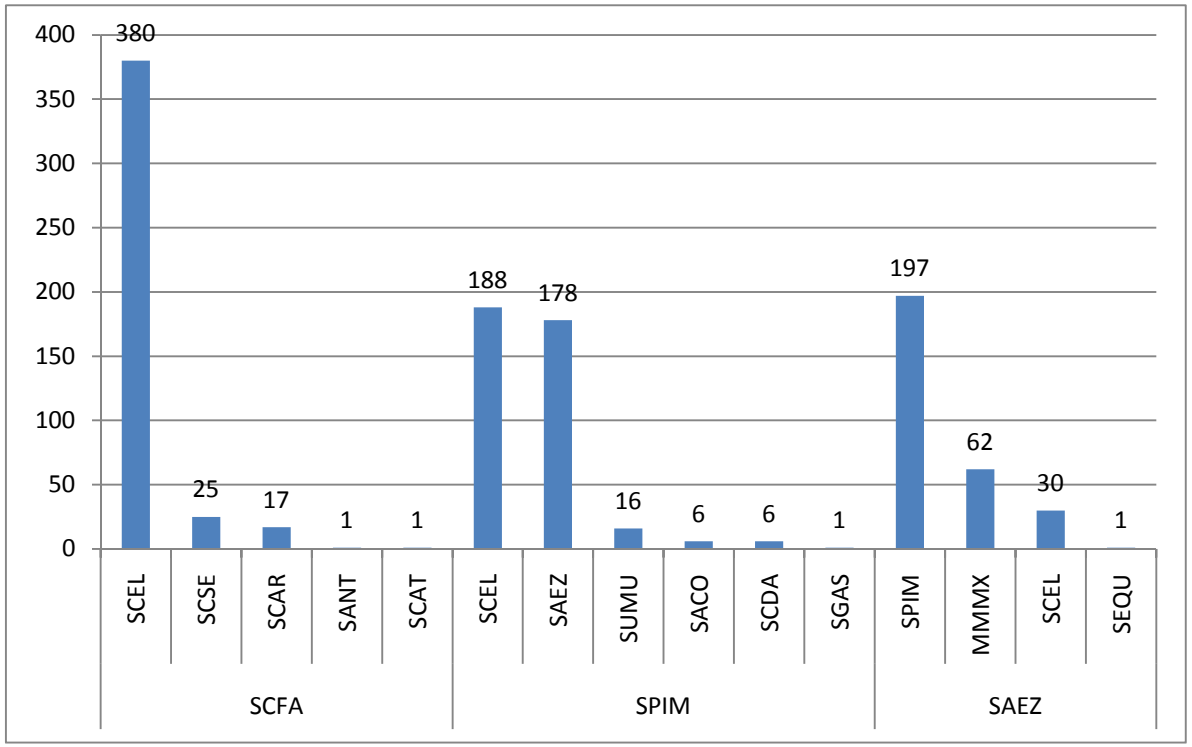
CHILE

Apéndice K

FIR ANTOFAGASTA/SANTIAGO

FIR ANTOFAGASTA/SANTIAGO – PARES DE CIUDADES

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300
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200
150
100
50
0
380
25
17
1
1
188
178
16
6
6
1
197
62
30
1
SCEL
SCSE
SCAR
SANT
SCAT
SCEL
SAEZ
SUMU
SACO
SCDA
SGAS
SPIM
MMMX
SCEL
SEQU
SCFA
SPIM
SAEZ

FIR ANTOFAGASTA/SANTIAGO – ANALISIS DE RUTAS ATS

RUTA	Total	%	ACUMULADO	AIP
UW200	1707	30.16%	30.16%	UW200
UT106	723	12.77%	42.93%	UT106
UL780	517	9.13%	52.07%	UL780
UL550	437	7.72%	59.79%	UL550
UT108	351	6.20%	65.99%	UT108
UL309	313	5.53%	71.52%	UL309
UW117	290	5.12%	76.64%	UW117
UL302	279	4.93%	81.57%	UL302
UW109	279	4.93%	86.50%	UW109
UT112	127	2.24%	88.75%	UT112
UW204	109	1.93%	90.67%	UW204
UW208	89	1.57%	92.24%	UW208
UL401	81	1.43%	93.67%	UL401
UL348	59	1.04%	94.72%	UL348
UL300	45	0.80%	95.51%	UL300
DORKA DCT MIBAS	37	0.65%	96.17%	
UB684	32	0.57%	96.73%	UB684
MIBAS DCT DORKA	29	0.51%	97.24%	
UL797	27	0.48%	97.72%	UL797
RANDOM	26	0.46%	98.18%	
LINER DCT ANKON	21	0.37%	98.55%	
UM664	18	0.32%	98.87%	UM664
UT101	16	0.28%	99.15%	UT101
IQQ DCT DORKA	7	0.12%	99.28%	
UB560	7	0.12%	99.40%	UB560
MIBAS DCT IREMI	6	0.11%	99.51%	
DORKA DCT IQQ	5	0.09%	99.59%	
UG551	4	0.07%	99.66%	UG551
DAT DCT LOA	2	0.04%	99.70%	
LOA DCT DAT	2	0.04%	99.73%	
MIBAS TOY UL302	2	0.04%	99.77%	
UL650	2	0.04%	99.81%	UL650
UM529	2	0.04%	99.84%	UM529

UR560	2	0.04%	99.88%	UR560
DORKA DCT TOY	1	0.02%	99.89%	
DORKA DCT TOY UW208	1	0.02%	99.91%	UW208
IREMI DCT MIBAS	1	0.02%	99.93%	
MIBAS UL302 IREMI	1	0.02%	99.95%	
MIBAS DORKA	1	0.02%	99.96%	
UA306	1	0.02%	99.98%	UA306
UA307	1	0.02%	**100.00%**	UA307
Total general	**5660**	**100.00%**		

UB652,
UL322
UM424
UM789,
UM799
UR683

FIR ANTOFAGASTA/SANTIAGO - PARES DE CIUDADES / RUTAS ATS

RUTA	ORIGEN	DESTINO	Total
UW200	SCEL	SCFA	391
		SCDA	225
		SPIM	204
		SCAT	113
		SCSE	101
		SCAR	51
		SKBO	43
		CYYZ	24
		KMIA	10
		SEQU	6
		SVMI	5
		SELT	5
		MDPC	4
		KDFW	2
		MPTO	2
		SCES	2
		MMMX	1
		SEGU	1
		SCHA	1
		SCCF	1
	Total SCEL		1192
	SCDA	SCEL	186
		SCAT	19
		SLLP	14
		SEQU	3
		SCVM	1
	Total SCDA		223
	SCTC	SCEL	100
		SCTB	1
		PUREN	1
	Total SCTC		102
	SCAR	SCEL	47

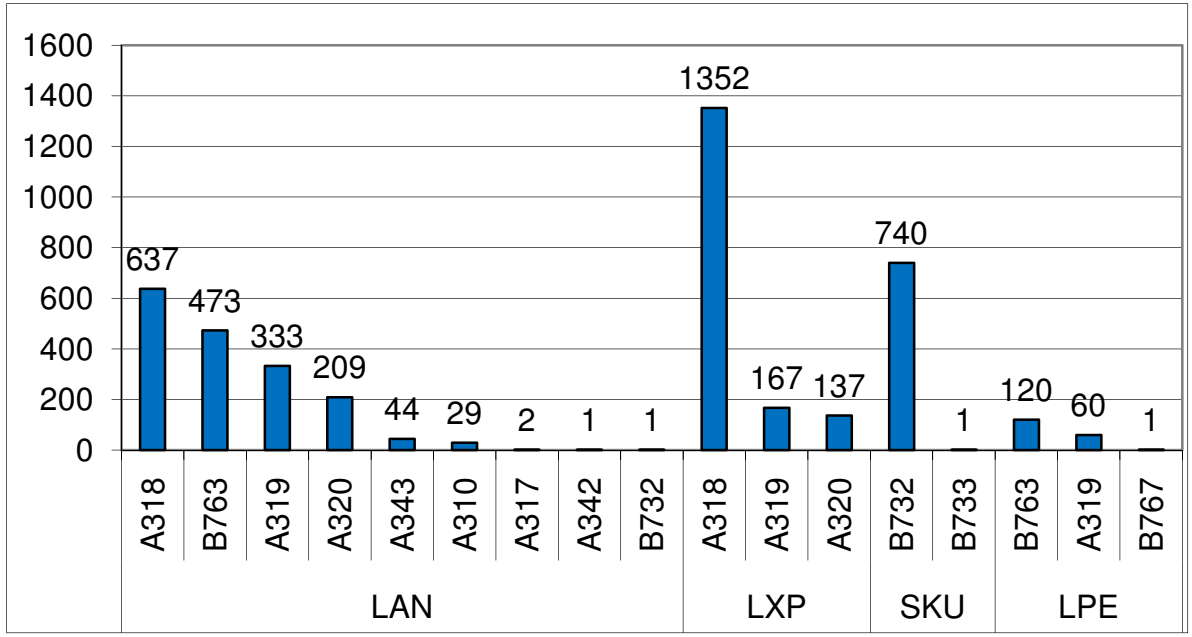
		SCFA	9
	Total		
	SCAR		56
	SCTE	SCIE	24
		SCEL	6
	Total SCTE		30
	SCSE	SCFA	25
		SCEL	1
	Total SCSE		26
	SCAT	SCDA	14
		SCEL	2
		SCFA	1
	Total SCAT		17
	SKBO	SCEL	15
	Total		
	SKBO		15
	SCFA	SCEL	12
		SCAT	1
	Total SCFA		13
	SPIM	SAEZ	9
		SCEL	2
		SACO	1
	Total SPIM		12
	SCIE	SCEL	9
		SCTE	2
	Total SCIE		11
	MDPC	SCEL	3
	Total		
	MDPC		3
	SAEZ	SCEL	2
	Total SAEZ		2
	SVMI	SCEL	1
	Total SVMI		1
	SCEL	SCSE	1
	Total SCEL		1
	SCVM	SCAR	1
	Total		1

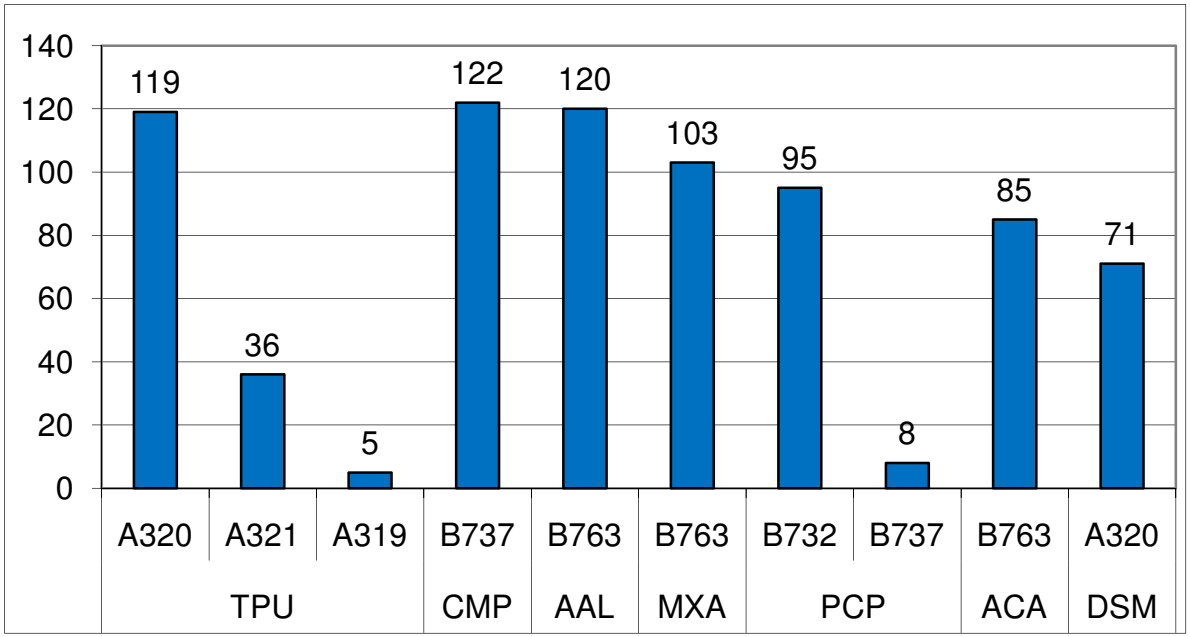
	SCVM		
	SCCI	SCEL	1
	Total SCCI		1
	SCTB	SCES	1
	Total SCTB		1
Total UW200			**1707**
UT106	SCFA	SCEL	366
	Total SCFA		366
	SCEL	SCTE	229
		SCCI	58
		SCJO	31
		SCBA	29
		SCDA	1
		SCCY	1
	Total SCEL		349
	SCDA	SCEL	3
	Total SCDA		3
	SCTB	SCTE	1
		SCJO	1
	Total SCTB		2
	SCAR	SCEL	1
	Total SCAR		1
	SFA	SCEL	1
	Total SFA		1
	SCEL	SCTE	1
	Total SCEL		1
Total UT106			**723**
UL780	SCEL	KMIA	79
		MPTO	61
		SEGU	37
		KATL	29
		KDFW	28
		KJFK	17
		MMMX	7

		SEQU	7
		MUHA	4
		SPIM	2
		MTPP	1
	Total SCEL		272
	KMIA	SCEL	67
	Total KMIA		67
	MPTO	SCEL	60
	Total MPTO		60
	SEGU	SCEL	39
	Total SEGU		39
	KATL	SCEL	29
	Total KATL		29
	KJFK	SCEL	18
	Total KJFK		18
	KDFW	SCEL	16
	Total KDFW		16
	CYYZ	SCEL	9
	Total CYYZ		9
	MMMX	SCEL	3
	Total MMMX		3
	MUHA	SCEL	2
	Total MUHA		2
	SCEL	SEGU	1
	Total SCEL		1
	MMUN	SCEL	1
	Total MMUN		1
Total UL780			**517**

FIR ANTOFAGASTA/SANTIAGO

OPERADOR/TIPO DE AERONAVE

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B737
B763
B763
B732
B737
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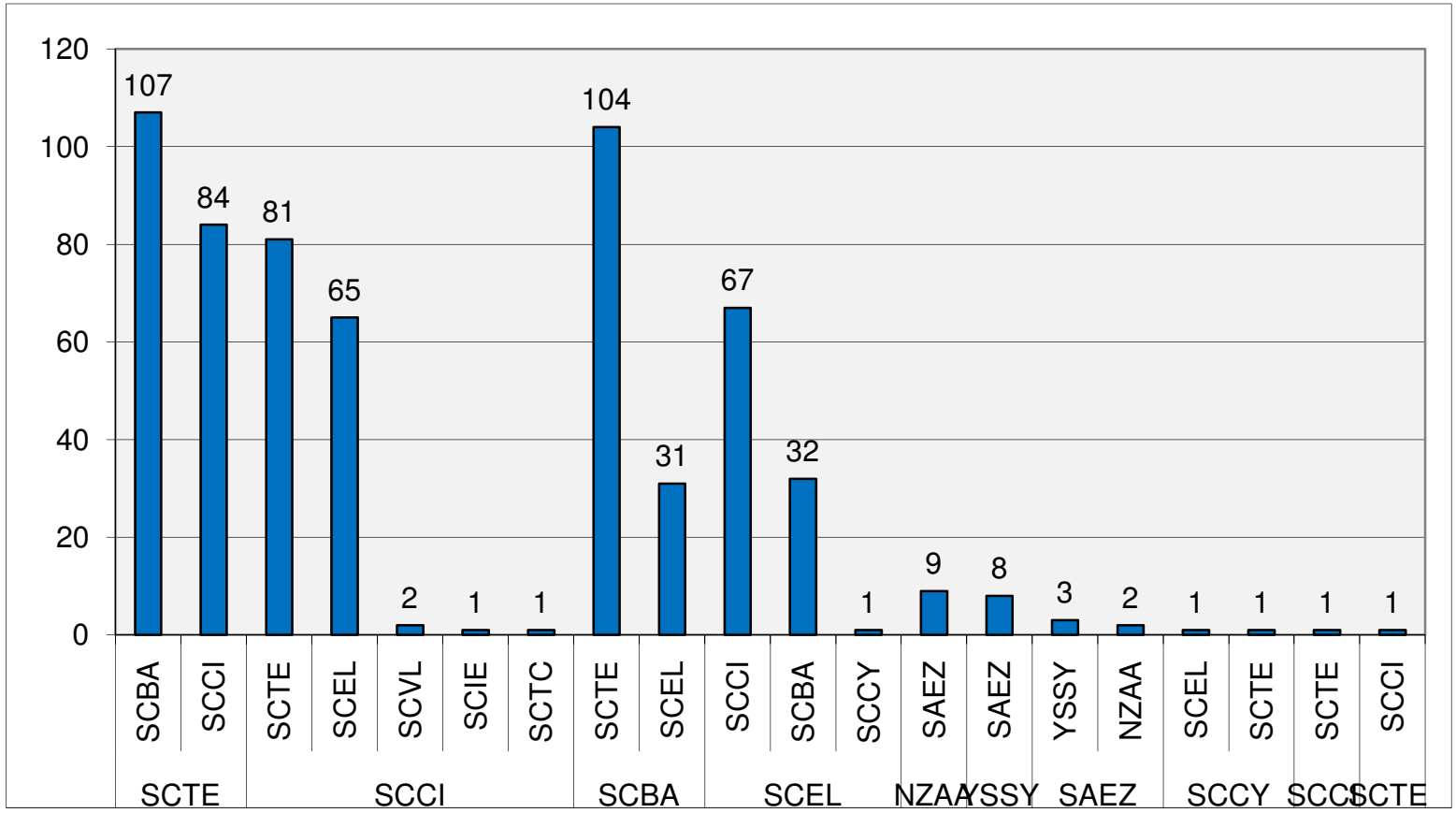
TPU
CMP
AAL
MXA
PCP
ACA
DSM

Apéndice L

FIR PUERTO MONTT – PARES DE CIUDADES



FIR PUERTO MONTT – ANÁLISIS DE RUTAS ATS

RUTA	Total	%	ACUMULADO	
UW101	348	57.81%	57.81%	UW101
UT100	131	21.76%	79.57%	UT100
UT106	73	12.13%	91.69%	UT106
UG550	26	4.32%	96.01%	UG550
DCT	14	2.33%	98.34%	
UB682	8	1.33%	99.67%	UB682
UT108	1	0.17%	99.83%	UT108
UT102	1	0.17%	**100.00%**	UT102
Total general	**602**	**100.00%**		

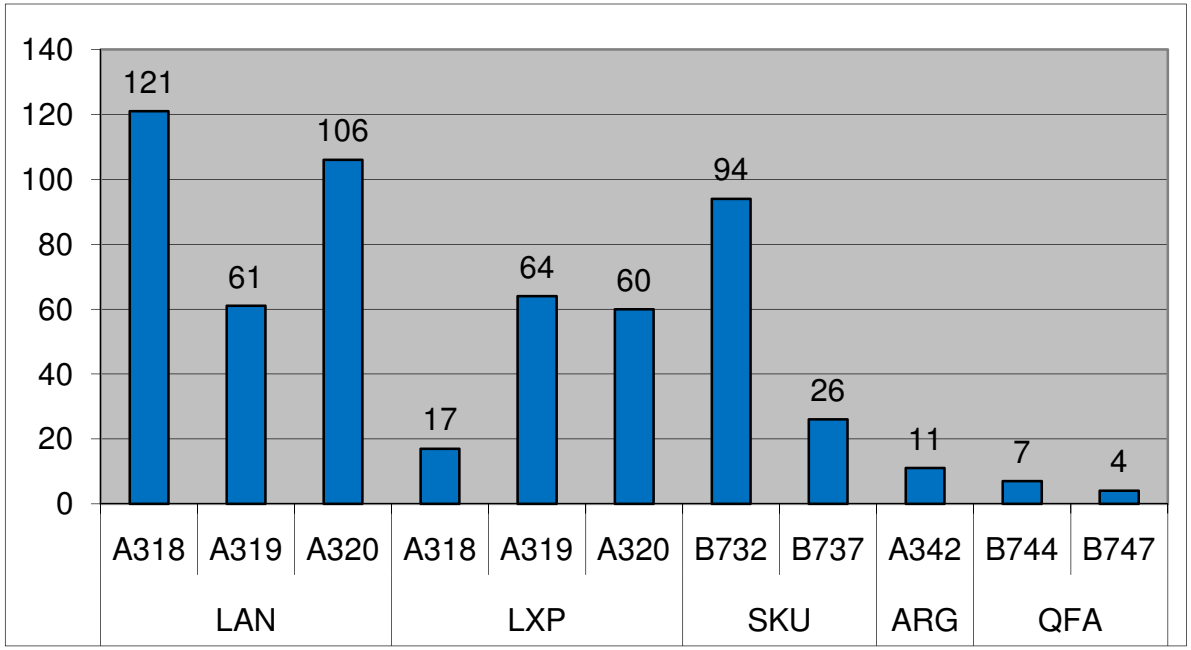
UB566
UG551
UL775
UT112

FIR PUERTO MONTT
ANÁLISIS DE PARES DE CIUDADES / RUTAS ATS

RUTA	ORIGEN	DESTINO	Total	%	ACUMULADO
UW101	SCTE	SCBA	95	15.78%	15.78%
		SCCI	77	12.79%	28.57%
	Total				
	SCTE		172	28.57%	28.57%
	SCBA	SCTE	90	14.95%	43.52%
		SCEL	28	4.65%	48.17%
	Total				
	SCBA		118	19.60%	48.17%
	SCEL	SCCI	16	2.66%	50.83%
		SCBA	9	1.50%	52.33%
	Total				
	SCEL		25	4.15%	52.33%
	SCCI	SCTE	11	1.83%	54.15%
		SCEL	9	1.50%	55.65%
		SCVL	2	0.33%	55.98%
	Total				
	SCCI		22	3.65%	55.98%
	SCCY	SCTE	1	0.17%	56.15%
		SCEL	1	0.17%	56.31%
	Total				
	SCCY		2	0.33%	56.31%
	SCCI	SCTE	1	0.17%	56.48%
	Total				
	SCCI		1	0.17%	56.48%
Total UW101			340	56.48%	56.48%
UT100	SCCI	SCTE	60	9.97%	66.45%
		SCEL	49	8.14%	74.58%
		SECL	1	0.17%	74.75%
		SCIE	1	0.17%	74.92%
		SCTC	1	0.17%	75.08%

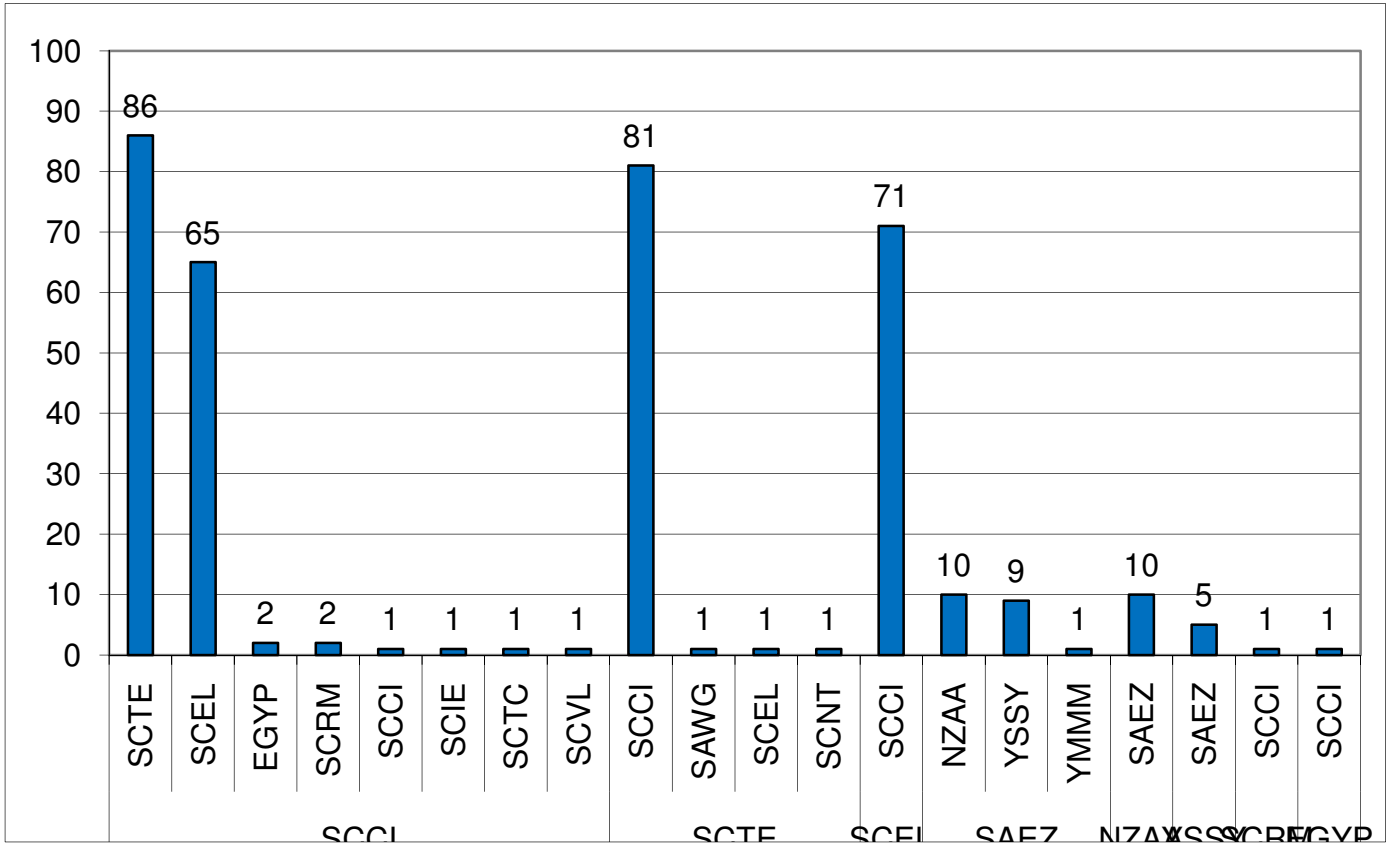
	Total				
	SCCI		112	18.60%	75.08%
	SCTE	SCCI	3	0.50%	75.58%
	Total				
	SCTE		3	0.50%	75.58%
	SCTE	SCCI	1	0.17%	75.75%
	Total				
	SCTE		1	0.17%	75.75%
	SCBA	SCTE	1	0.17%	75.91%
	Total				
	SCBA		1	0.17%	75.91%
	SCEL	SCCI	1	0.17%	76.08%
	Total				
	SCEL		1	0.17%	76.08%
Total UT100			**118**	**19.60%**	**76.08%**
UT106	SCEL	SCCI	44	7.31%	83.39%
		SCBA	17	2.82%	86.21%
		SCCY	1	0.17%	86.38%
	Total				
	SCEL		62	10.30%	86.38%
	SCCI	SCTE	1	0.17%	86.54%
		SCEL	1	0.17%	86.71%
	Total				
	SCCI		2	0.33%	86.71%
	SCTE	SCCI	1	0.17%	86.88%
	Total				
	SCTE		1	0.17%	86.88%
Total UT106			**65**	**10.80%**	**86.88%**

FIR PUERTO MONTT – OPERADOR/TIPO DE AERONAVE



Apéndice M

FIR PUNTA ARENAS – PARES DE CIUDADES



FIR PUNTA ARENAS – ANÁLISIS DE RUTAS ATS

RUTA	Total	%	ACUMULADO	AIP
UT100	308	88.00%	88.00%	UT100
DCT	31	8.86%	96.86%	
UA570	6	1.71%	98.57%	UA570
UW100	3	0.86%	99.43%	UW100
UG550	1	0.29%	99.71%	UG550
UT100/A570	1	0.29%	100.00%	
Total general	**350**	**100.00%**		

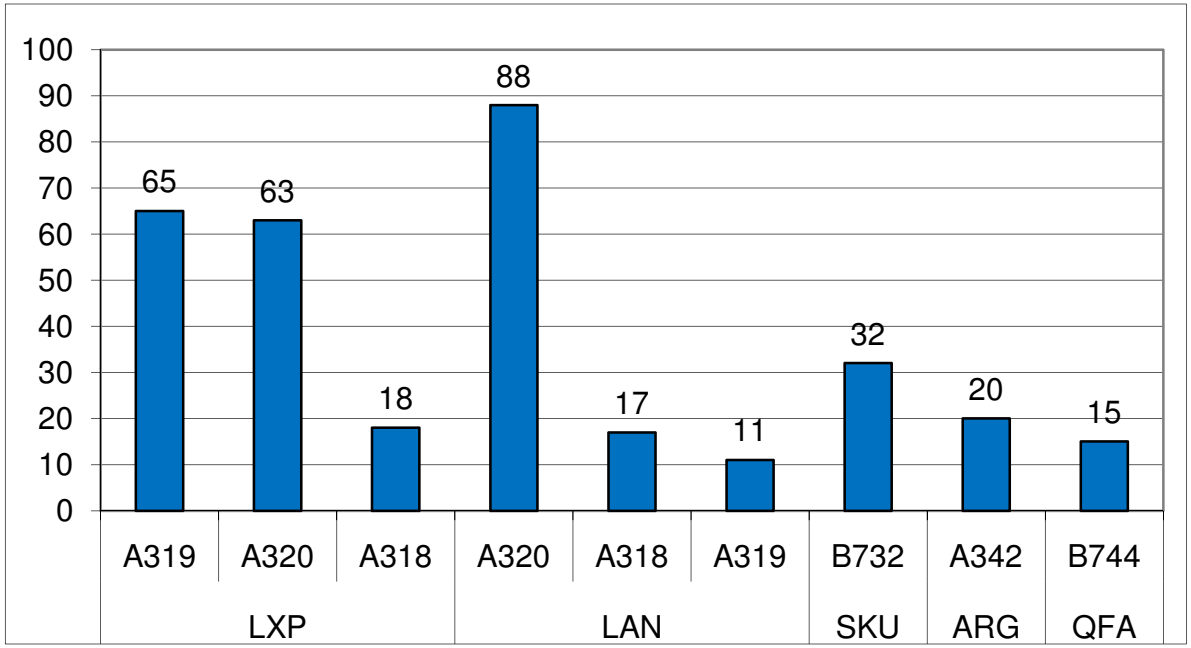
UB561
UT102
UW56
UW115

FIR PUNTA ARENAS – PARES DE CIUDADES / RUTAS ATS

RUTA	ORIGEN	DESTINO	Total	%	ACUMULADO
UT100	SCCI	SCTE	86	24.50%	24.50%
		SCEL	65	18.52%	43.02%
		SCTC	1	0.28%	43.30%
		SCCI	1	0.28%	43.59%
		SCIE	1	0.28%	43.87%
	Total				
	SCCI		154	43.87%	43.87%
	SCEL	SCCI	71	20.23%	64.10%
	Total				
	SCEL		71	20.23%	64.10%
	SCTE	SCCI	81	23.08%	87.18%
		SCNT	1	0.28%	87.46%
		SCEL	1	0.28%	87.75%
	Total				
	SCTE		83	23.65%	87.75%
Total UT100			**308**	**87.75%**	**87.75%**
DCT	NZAA	SAEZ	10	2.85%	90.60%
	Total				
	NZAA		10	2.85%	90.60%
	SAEZ	NZAA	9	2.56%	93.16%
		YSSY	8	2.28%	95.44%
	Total				
	SAEZ		17	4.84%	95.44%
	YSSY	SAEZ	5	1.42%	96.87%
	Total				
	YSSY		5	1.42%	96.87%
Total DCT			**32**	**9.12%**	**96.87%**
UA570	EGYP	SCCI	1	0.28%	97.15%
	Total				
	EGYP		1	0.28%	97.15%
	SAEZ	NZAA	1	0.28%	97.44%
		YSSY	1	0.28%	97.72%

		YMMM	1	0.28%	98.01%
	Total				
	SAEZ		3	0.85%	98.01%
	SCCI	EGYP	2	0.57%	98.58%
	Total				
	SCCI		2	0.57%	98.58%
Total UA570			**6**	**1.71%**	**98.58%**
UW100	SCCI	SCRM	2	0.57%	99.15%
	Total				
	SCCI		2	0.57%	99.15%
	SCRM	SCCI	1	0.28%	99.43%
	Total				
	SCRM		1	0.28%	99.43%
Total UW100			**3**	**0.85%**	**99.43%**
UT100/A570	SCTE	SAWG	1	0.28%	99.72%
	Total				
	SCTE		1	0.28%	99.72%
Total UT100/A570			**1**	**0.28%**	**99.72%**
UG550	SCCI	SCVL	1	0.28%	100.00%
	Total				
	SCCI		1	0.28%	100.00%
Total UG550			**1**	**0.28%**	**100.00%**
Total general			**351**	**100.00%**	

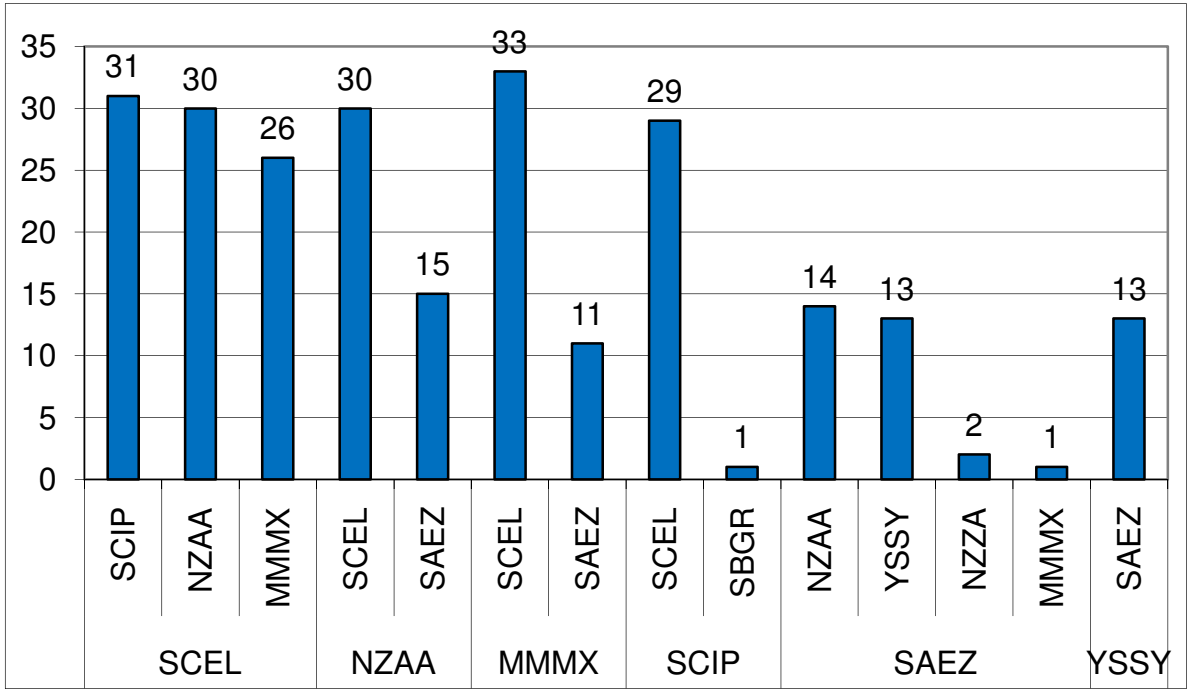
FIR PUNTA ARENAS OPERADOR/TIPO DE AERONAVE



CIA	TIPO ACFT	Total	%	ACUMULADO
LXP	A319	65	18.52%	18.52%
	A320	63	17.95%	36.47%
	A318	18	5.13%	41.60%
Total LXP		**146**	**41.60%**	**41.60%**
LAN	A320	88	25.07%	66.67%
	A318	17	4.84%	71.51%
	A319	11	3.13%	74.64%
Total LAN		**116**	**33.05%**	**74.64%**
SKU	B732	32	9.12%	83.76%
Total SKU		**32**	**9.12%**	**83.76%**
ARG	A342	20	5.70%	89.46%
Total ARG		**20**	**5.70%**	**89.46%**
QFA	B744	15	4.27%	93.73%
Total QFA		**15**	**4.27%**	**93.73%**
OTROS		**22**	**6.27%**	**100.00%**
Total general		**351**	**100.00%**	

Apéndice N

FIR OCEÁNICO – PARES DE CIUDADES



FIR OCEÁNICO – ANÁLISIS DE RUTAS ATS

RUTA	Total
UL401	73
UL348	36
	109
UPR	120
RDM	16
RND	8
	144
Total general	**253**

AIP

UL401

UL348

RUTA	Total	%	ACUMULADO
UPR/RDM/RND	144	56.92%	56.92%
UL401	73	28.85%	85.77%
UL348	36	14.23%	**100.00%**
Total general	**253**	**100.00%**	

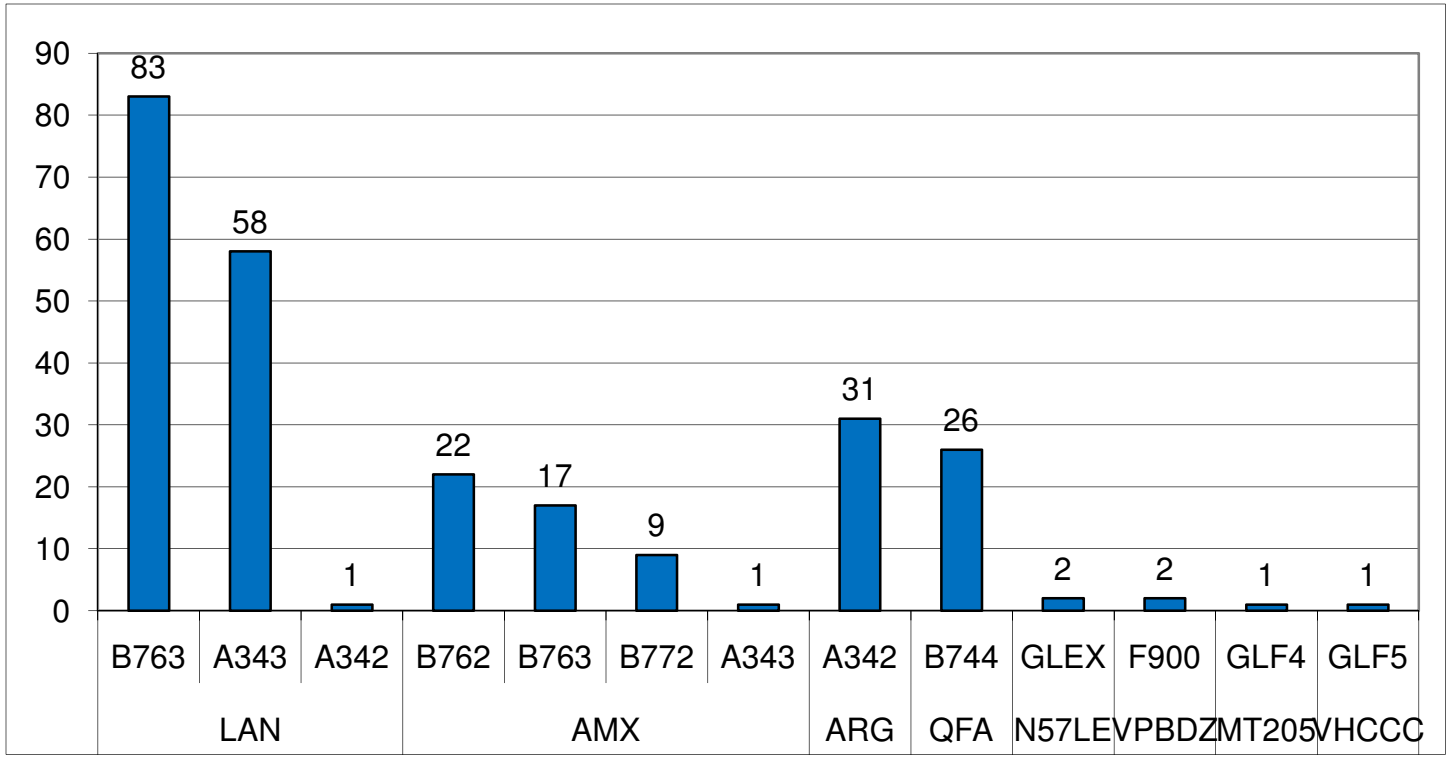
FIR OCEÁNICO – PARES DE CIUDADES / RUTAS ATS

RUTA	ORIGEN	DESTINO	Total	%	ACUMULADO
UPR	SCEL	NZAA	29	11.37%	11.37%
		SCIP	7	2.75%	14.12%
		CSIP	1	0.39%	14.51%
	Total				
	SCEL		37	14.51%	14.51%
	NZAA	SCEL	30	11.76%	26.27%
		SAEZ	4	1.57%	27.84%
	Total				
	NZAA		34	13.33%	27.84%
	SAEZ	YSSY	13	5.10%	32.94%
		NZAA	6	2.35%	35.29%
	Total				
	SAEZ		19	7.45%	35.29%
	SCIP	SCEL	15	5.88%	41.18%
	Total SCIP		15	5.88%	41.18%
	YSSY	SAEZ	12	4.71%	45.88%
	Total				
	YSSY		12	4.71%	45.88%
	MMMX	SCEL	1	0.39%	46.27%
	Total				
	MMMX		1	0.39%	46.27%
	SCDA	NTAA	1	0.39%	46.67%
	Total				
	SCDA		1	0.39%	46.67%
	NTAA	SCDA	1	0.39%	47.06%
	Total				
	NTAA		1	0.39%	47.06%
Total UPR			**120**	**47.06%**	**47.06%**
UL401	MMMX	SCEL	33	12.94%	60.00%
		SAEZ	11	4.31%	64.31%
	Total				
	MMMX		44	17.25%	64.31%

	SCEL	MMMX	26	10.20%	74.51%
		SCIP	2	0.78%	75.29%
	Total				
	SCEL		28	10.98%	75.29%
	SCIP	SCEL	1	0.39%	75.69%
	Total SCIP		1	0.39%	75.69%
	SAEZ	MMMX	1	0.39%	76.08%
	Total				
	SAEZ		1	0.39%	76.08%
Total UL401			**74**	**29.02%**	**76.08%**
UL348	SCEL	SCIP	21	8.24%	84.31%
	Total				
	SCEL		21	8.24%	84.31%
	SCIP	SCEL	14	5.49%	89.80%
		SBGR	1	0.39%	90.20%
	Total SCIP		15	5.88%	90.20%
	NTAA	SBGR	1	0.39%	90.59%
	Total				
	NTAA		1	0.39%	90.59%
Total UL348			**37**	**14.51%**	**90.59%**
RDM	NZAA	SAEZ	8	3.14%	93.73%
	Total				
	NZAA		8	3.14%	93.73%
	SAEZ	NZAA	7	2.75%	96.47%
	Total				
	SAEZ		7	2.75%	96.47%
	NTAA	SBKP	1	0.39%	96.86%
	Total				
	NTAA		1	0.39%	96.86%
Total RDM			**16**	**6.27%**	**96.86%**
RND	NZAA	SAEZ	3	1.18%	98.04%
	Total				
	NZAA		3	1.18%	98.04%

	SAEZ	NZAA	3	1.18%	99.22%
	Total				
	SAEZ		3	1.18%	99.22%
	YSSY	SAEZ	1	0.39%	99.61%
	Total				
	YSSY		1	0.39%	99.61%
	SCEL	NZAA	1	0.39%	100.00%
	Total				
	SCEL		1	0.39%	100.00%
Total RND			**8**	**3.14%**	**100.00%**
Total general			**255**	**100.00%**	

FIR OCEÁNICO - OPERADOR/TIPO DE AERONAVE

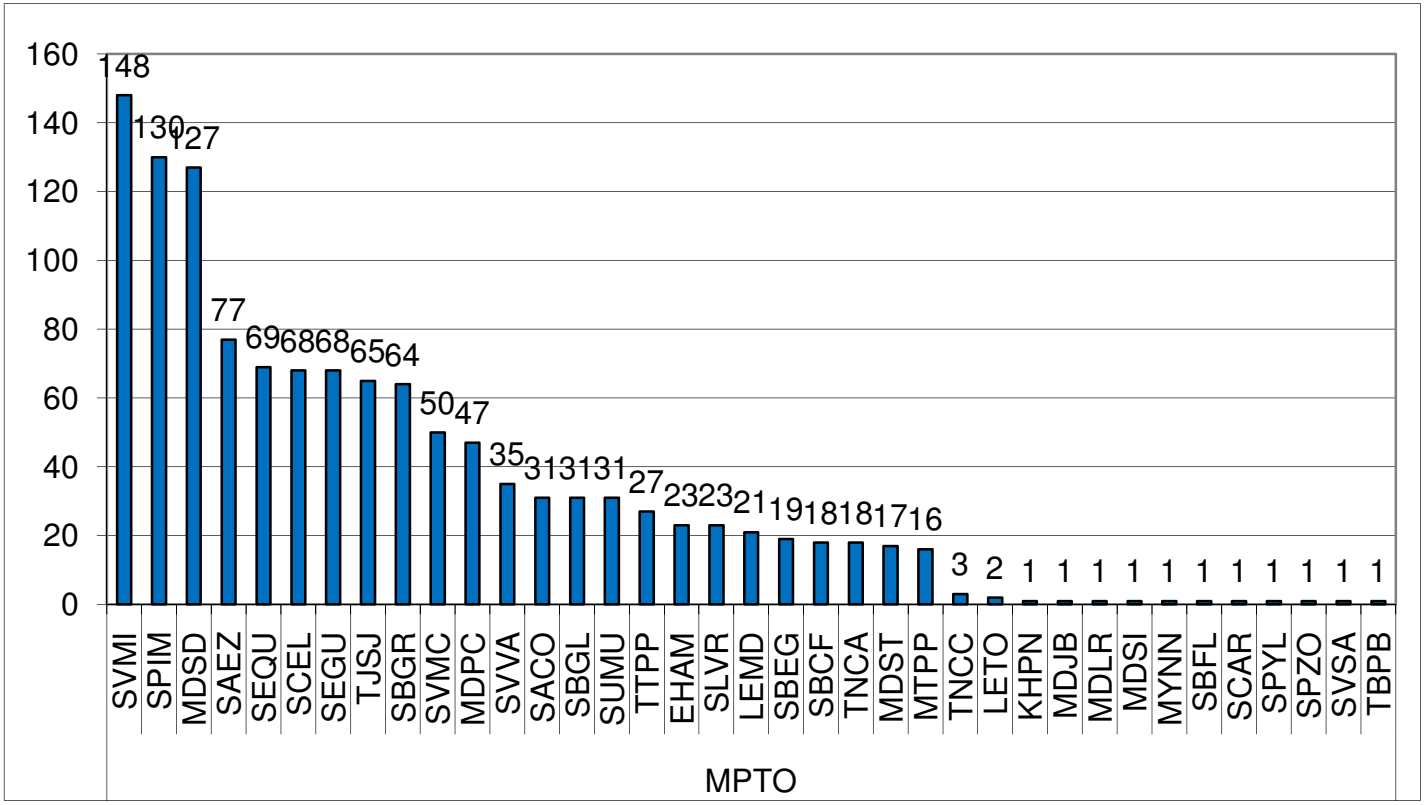


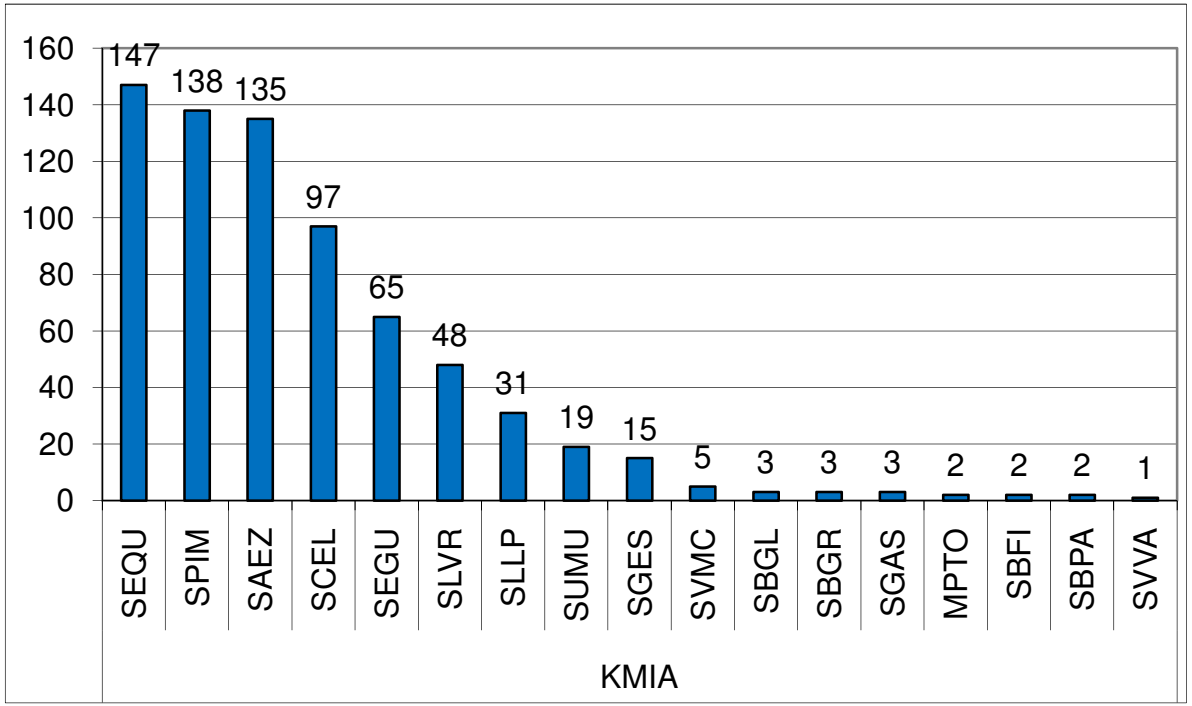
COLOMBIA

Apéndice O

FIR BOGOTÁ/BARRANQUILLA

FIR BOGOTÁ/BARRANQUILLA – PARES DE CIUDADES

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2
1
SEQU
SPIM
SAEZ
SCEL
SEGU
SLVR
SLLP
SUMU
SGES
SVMC
SBGL
SBGR
SGAS
MPTO
SBFI
SBPA
SVVA
KMIA

FIR BOGOTÁ/BARRANQUILLA – ANÁLISIS DE RUTAS ATS

RUTA	Total	%	ACUMULADO
UL780	1090	16.74%	16.74%
UG437	626	9.62%	26.36%
UG426	584	8.97%	35.33%
UA319	579	8.89%	44.22%
UA553	495	7.60%	51.83%
UA321	455	6.99%	58.82%
UL417	366	5.62%	64.44%
UA317	280	4.30%	68.74%
UA301	247	3.79%	72.53%
UA550	219	3.36%	75.90%
UM414	207	3.18%	79.08%
UM525	145	2.23%	81.31%
UL655	142	2.18%	83.49%
UG439	107	1.64%	85.13%
UA574	90	1.38%	86.51%
UA552	88	1.35%	87.86%
UR640	80	1.23%	89.09%
UM787	78	1.20%	90.29%
UM796	72	1.11%	91.40%
UM782	67	1.03%	92.43%
UQ104	62	0.95%	93.38%
UB689	49	0.75%	94.13%
UA550/UA567	48	0.74%	94.87%
UM659	41	0.63%	95.50%
UA567/UA550	40	0.61%	96.11%
UQ102	39	0.60%	96.71%
UQ103	34	0.52%	97.24%
UG430	**31**	**0.48%**	**97.71%**
UA567	27	0.41%	98.13%
UL318	23	0.35%	98.48%
UA323	20	0.31%	98.79%
UG427	12	0.18%	98.97%
UR564	11	0.17%	99.14%

	AIP
1	UA301
2	UA317
3	UA319
4	UA321
5	UA323
6	UA550
7	UA552
8	UA553
9	UA565
10	UA566
11	UA567
12	UA574
13	UB510
14	UB689
15	UG426
16	UG427
17	UG430
18	UG431
19	UG437
20	UG438
21	UG439
22	UG444
23	UG445
24	UG447
25	UL201
26	UL300
27	UL305
28	UL318
29	UL417
30	UL423
31	UL474
32	UL655
33	UL780

UG438	9	0.14%	99.28%	34	UM414
UG444	9	0.14%	99.42%	35	UM525
UQ101	9	0.14%	99.55%	36	UM538
UG431	4	0.06%	99.62%	37	UM542
UG447	4	0.06%	99.68%	38	UM656
UM542	3	0.05%	99.72%	39	UM659
UQ105	3	0.05%	99.77%	40	UM778
UM538	2	0.03%	99.80%	41	UM782
UQ108	2	0.03%	99.83%	42	UM787
UQ109	2	0.03%	99.86%	43	UM796
UR567	2	0.03%	99.89%	44	UR564
UL300	1	0.02%	99.91%	45	UR567
UL305	1	0.02%	99.92%	46	UR640
UL423	1	0.02%	99.94%	47	UW5
UQ110	1	0.02%	99.95%	48	UW9
UQ112	1	0.02%	99.97%	49	UW20
UQ114	1	0.02%	99.98%	50	UW23
W19	1	0.02%	**100.00%**	51	UW34
Total general	**6510**	**100.00%**		52	UW36
				53	UW44
				54	UQ101
				55	UQ102
				56	UQ103
				57	UQ104
				58	UQ105
				59	UQ106
				60	UQ107
				61	UQ108
				62	UQ109
				63	UQ110
				64	UQ111
				65	UQ112
				66	UQ113
				67	UQ114
				68	UA322
				69	UB690

70	UG448
71	UR505

FIR BOGOTÁ/BARRANQUILLA

PARES DE CIUDADES / RUTAS ATS

RUTA	ORIGEN	DESTINO	Total	%	ACUMULADO
UL780	SPIM	MPTO	119	1.83%	1.83%
		KMIA	86	1.32%	3.15%
		KJFK	31	0.48%	3.63%
		KATL	29	0.45%	4.07%
		KEWR	14	0.22%	4.29%
		CYYZ	6	0.09%	4.38%
	Total SPIM		285	4.38%	4.38%
	KMIA	SPIM	114	1.75%	6.13%
		SCEL	78	1.20%	7.33%
		SEGY	8	0.12%	7.45%
		SAEZ	1	0.02%	7.47%
	Total KMIA		201	3.09%	7.47%
	SCEL	KMIA	72	1.11%	8.57%
		MPTO	58	0.89%	9.46%
		KATL	29	0.45%	9.91%
		KJFK	18	0.28%	10.18%
		CYYZ	11	0.17%	10.35%
		MUHA	4	0.06%	10.41%
		KDFW	3	0.05%	10.46%
		MTPP	2	0.03%	10.49%
	Total SCEL		197	3.03%	10.49%
	MPTO	SPIM	118	1.81%	12.30%
		SCEL	61	0.94%	13.24%
	Total MPTO		179	2.75%	13.24%
	KATL	SPIM	31	0.48%	13.72%
		SCEL	28	0.43%	14.15%
	Total KATL		59	0.91%	14.15%
	KJFK	SPIM	31	0.48%	14.62%
		SCEL	17	0.26%	14.88%

		SEGY	5	0.08%	14.96%
	Total KJFK		53	0.81%	14.96%
	SEGY	KJFK	27	0.41%	15.38%
		KMIA	16	0.25%	15.62%
		KATL	6	0.09%	15.71%
		KFXE	2	0.03%	15.75%
		KFLL	1	0.02%	15.76%
	Total SEGY		52	0.80%	15.76%
	KEWR	SPIM	31	0.48%	16.24%
	Total KEWR		31	0.48%	16.24%
	CYYZ	SCEL	15	0.23%	16.47%
		SPIM	7	0.11%	16.57%
	Total CYYZ		22	0.34%	16.57%
	KFLL	SEGY	2	0.03%	16.61%
	Total KFLL		2	0.03%	16.61%
	KFXE	SPIM	1	0.02%	16.62%
		SEGY	1	0.02%	16.64%
	Total KFXE		2	0.03%	16.64%
	MTPP	SCEL	2	0.03%	16.67%
	Total MTPP		2	0.03%	16.67%
	MUHA	SCEL	1	0.02%	16.68%
	Total MUHA		1	0.02%	16.68%
	KDFW	SCEL	1	0.02%	16.70%
	Total KDFW		1	0.02%	16.70%
	SPUR	MPTO	1	0.02%	16.71%
	Total SPUR		1	0.02%	16.71%
	KFPR	SEQU	1	0.02%	16.73%
	Total KFPR		1	0.02%	16.73%
	SEQU	KMIA	1	0.02%	16.74%
	Total SEQU		1	0.02%	16.74%

Total UL780			**1090**	**16.74%**	**16.74%**
UG437	SEGY	KMIA	112	1.72%	18.46%
		MPTO	63	0.97%	19.43%
		KATL	6	0.09%	19.52%
		KJFK	5	0.08%	19.60%
		KFLL	4	0.06%	19.66%
		KOPF	1	0.02%	19.68%
		KMMU	1	0.02%	19.69%
		KFXE	1	0.02%	19.71%
		MPMG	1	0.02%	19.72%
		KHPN	1	0.02%	19.74%
		KAEX	1	0.02%	19.75%
		KIND	1	0.02%	19.77%
	Total SEGY		197	3.03%	19.77%
	SPIM	KMIA	96	1.47%	21.24%
		KFLL	26	0.40%	21.64%
		KEWR	17	0.26%	21.90%
		CYYZ	9	0.14%	22.04%
		MPTO	8	0.12%	22.17%
		KATL	2	0.03%	22.20%
		KFFL	1	0.02%	22.21%
	Total SPIM		159	2.44%	22.21%
	MPTO	SEGY	65	1.00%	23.21%
		SPYL	1	0.02%	23.23%
		SPIM	1	0.02%	23.24%
		SCEL	1	0.02%	23.26%
		SAEZ	1	0.02%	23.27%
	Total MPTO		69	1.06%	23.27%
	KMIA	SEGY	52	0.80%	24.07%
		SEQU	3	0.05%	24.12%
		SCEL	3	0.05%	24.16%
	Total KMIA		58	0.89%	24.16%
	KFLL	SPIM	27	0.41%	24.58%

		SEGY	3	0.05%	24.62%
	Total KFLL		30	0.46%	24.62%
	KJFK	SEGY	30	0.46%	25.08%
	Total KJFK		30	0.46%	25.08%
	SCEL	CYYZ	10	0.15%	25.24%
		KMIA	8	0.12%	25.36%
		MPTO	2	0.03%	25.39%
	Total SCEL		20	0.31%	25.39%
	KATL	SEGY	12	0.18%	25.58%
		SCEL	1	0.02%	25.59%
	Total KATL		13	0.20%	25.59%
	CYYZ	SCEL	7	0.11%	25.70%
		SPIM	6	0.09%	25.79%
	Total CYYZ		13	0.20%	25.79%
	MUHA	SAEZ	6	0.09%	25.88%
		SCEL	3	0.05%	25.93%
	Total MUHA		9	0.14%	25.93%
	SEQU	KATL	8	0.12%	26.05%
	Total SEQU		8	0.12%	26.05%
	MPMG	SEGY	3	0.05%	26.10%
	Total MPMG		3	0.05%	26.10%
	SEMT	MUHA	1	0.02%	26.11%
		MRLB	1	0.02%	26.13%
	Total SEMT		2	0.03%	26.13%
	KHPN	SEGY	2	0.03%	26.16%
	Total KHPN		2	0.03%	26.16%
	KDFW	SCEL	2	0.03%	26.19%
	Total KDFW		2	0.03%	26.19%
	SACO	MPTO	1	0.02%	26.21%
	Total		1	0.02%	26.21%

	SACO				
	KIND	SEGY	1	0.02%	26.22%
	Total KIND		1	0.02%	26.22%
	KTEB	SEGY	1	0.02%	26.24%
	Total KTEB		1	0.02%	26.24%
	KOPF	SEGY	1	0.02%	26.25%
	Total KOPF		1	0.02%	26.25%
	MYNN	SCEL	1	0.02%	26.27%
	Total MYNN		1	0.02%	26.27%
	KAGS	SEGY	1	0.02%	26.28%
	Total KAGS		1	0.02%	26.28%
	KAEX	SEGY	1	0.02%	26.30%
	Total KAEX		1	0.02%	26.30%
	KFXE	SEGY	1	0.02%	26.31%
	Total KFXE		1	0.02%	26.31%
	KMMU	SEGY	1	0.02%	26.33%
	Total KMMU		1	0.02%	26.33%
Total UG437			**624**	**9.59%**	**26.33%**
UG426	SEQU	KMIA	106	1.63%	27.96%
		MPTO	70	1.08%	29.03%
		MUHA	24	0.37%	29.40%
		KATL	16	0.25%	29.65%
		MKJS	4	0.06%	29.71%
		KOPF	2	0.03%	29.74%
		KTEB	1	0.02%	29.75%
	Total SEQU		223	3.43%	29.75%
	KMIA	SEQU	123	1.89%	31.64%
		SCEL	14	0.22%	31.86%
		SPIM	6	0.09%	31.95%
		SEGY	2	0.03%	31.98%
	Total		145	2.23%	31.98%

	KMIA				
	MPTO	SEQU	66	1.01%	33.00%
		SCEL	5	0.08%	33.07%
		SPIM	3	0.05%	33.12%
		SEGY	1	0.02%	33.13%
	Total MPTO		75	1.15%	33.13%
	SPIM	KMIA	36	0.55%	33.69%
		MUHA	11	0.17%	33.86%
		KIAD	2	0.03%	33.89%
		MPTO	2	0.03%	33.92%
		MYNN	1	0.02%	33.93%
		KFLL	1	0.02%	33.95%
		KSDF	1	0.02%	33.96%
	Total SPIM		54	0.83%	33.96%
	MUHA	SEQU	28	0.43%	34.39%
		SPIM	14	0.22%	34.61%
	Total MUHA		42	0.65%	34.61%
	KATL	SEQU	20	0.31%	34.92%
	Total KATL		20	0.31%	34.92%
	SCEL	MPTO	4	0.06%	34.98%
		MWCR	1	0.02%	34.99%
		KMIA	1	0.02%	35.01%
	Total SCEL		6	0.09%	35.01%
	SEGY	MPTO	3	0.05%	35.05%
		KMIA	2	0.03%	35.08%
		MUHA	1	0.02%	35.10%
	Total SEGY		6	0.09%	35.10%
	MKJS	SEQU	4	0.06%	35.16%
	Total MKJS		4	0.06%	35.16%
	CYYZ	SPIM	1	0.02%	35.18%
		SEQU	1	0.02%	35.19%
	Total CYYZ		2	0.03%	35.19%
	KIAD	SPIM	2	0.03%	35.22%

	Total KIAD		2	0.03%	35.22%
	SPZO	MPTO	1	0.02%	35.24%
	Total SPZO		1	0.02%	35.24%
	MPMG	SPIM	1	0.02%	35.25%
	Total MPMG		1	0.02%	35.25%
	MNMG	SEGY	1	0.02%	35.27%
	Total MNMG		1	0.02%	35.27%
	MYNN	SPIM	1	0.02%	35.28%
	Total MYNN		1	0.02%	35.28%
	MWCR	SCEL	1	0.02%	35.30%
	Total MWCR		1	0.02%	35.30%
Total UG426			**584**	**8.97%**	**35.30%**
UA319	MPTO	MDSD	127	1.95%	37.25%
		MDPC	47	0.72%	37.97%
		EHAM	21	0.32%	38.29%
		MDST	17	0.26%	38.56%
		MTPP	15	0.23%	38.79%
		LEMD	9	0.14%	38.92%
		TJSJ	6	0.09%	39.02%
		MDLR	1	0.02%	39.03%
		LETO	1	0.02%	39.05%
		TTPP	1	0.02%	39.06%
		SPIM	1	0.02%	39.08%
		MDSI	1	0.02%	39.09%
		MDJB	1	0.02%	39.11%
		KHPN	1	0.02%	39.12%
	Total MPTO		249	3.82%	39.12%
	MDSD	MPTO	121	1.86%	40.98%
		MROC	30	0.46%	41.44%
		MPMG	2	0.03%	41.47%
	Total MDSD		153	2.35%	41.47%
	MDPC	MPTO	32	0.49%	41.97%

		MPMG	3	0.05%	42.01%
		SEQU	2	0.03%	42.04%
		SEGY	1	0.02%	42.06%
	Total				
	MDPC		38	0.58%	42.06%
	LEMD	MROC	23	0.35%	42.41%
	Total				
	LEMD		23	0.35%	42.41%
	MTPP	MPTO	16	0.25%	42.66%
		SEGY	1	0.02%	42.67%
		SCEL	1	0.02%	42.69%
	Total				
	MTPP		18	0.28%	42.69%
	EHAM	MPTO	18	0.28%	42.96%
	Total				
	EHAM		18	0.28%	42.96%
	MDST	MPTO	16	0.25%	43.21%
		MPMG	1	0.02%	43.23%
	Total				
	MDST		17	0.26%	43.23%
	MROC	MDSD	6	0.09%	43.32%
		LEMD	2	0.03%	43.35%
		TJSJ	1	0.02%	43.36%
	Total				
	MROC		9	0.14%	43.36%
	TJSJ	MROC	4	0.06%	43.43%
		MPTO	4	0.06%	43.49%
	Total TJSJ		8	0.12%	43.49%
	MPMG	MDPC	3	0.05%	43.53%
		MDJB	1	0.02%	43.55%
		MDLR	1	0.02%	43.56%
	Total				
	MPMG		5	0.08%	43.56%
	MDPP	SEQU	3	0.05%	43.61%
	Total				
	MDPP		3	0.05%	43.61%
	SCEL	MTPP	2	0.03%	43.64%
	Total SCEL		2	0.03%	43.64%

	MDJB	MPTO	2	0.03%	43.67%
	Total MDJB		2	0.03%	43.67%
	MMMX	SVMI	1	0.02%	43.69%
		SBGR	1	0.02%	43.70%
	Total MMMX		2	0.03%	43.70%
	TNCC	MSLP	1	0.02%	43.72%
	Total TNCC		1	0.02%	43.72%
	MDLR	MPMG	1	0.02%	43.73%
	Total MDLR		1	0.02%	43.73%
	ZZZZ	MPTO	1	0.02%	43.75%
	Total ZZZZ		1	0.02%	43.75%
	TJIG	MPTO	1	0.02%	43.76%
	Total TJIG		1	0.02%	43.76%
	KNTU	MPTO	1	0.02%	43.78%
	Total KNTU		1	0.02%	43.78%
Total UA319			**552**	**8.48%**	**43.78%**
UA553	MPTO	SVMI	122	1.87%	45.65%
		SVMC	48	0.74%	46.39%
		SVVA	35	0.54%	46.93%
		TTPP	26	0.40%	47.33%
		TNCA	1	0.02%	47.34%
		LETO	1	0.02%	47.36%
		LEMD	1	0.02%	47.37%
		SVSA	1	0.02%	47.39%
	Total MPTO		235	3.61%	47.39%
	SVMI	MPTO	135	2.07%	49.46%
		MSSS	1	0.02%	49.48%
	Total SVMI		136	2.09%	49.48%
	SVMC	MPTO	58	0.89%	50.37%
		MPMG	1	0.02%	50.38%
	Total		59	0.91%	50.38%

	SVMC				
	SVVA	MPTO	27	0.41%	50.80%
		MRPV	1	0.02%	50.81%
		MPMG	1	0.02%	50.83%
	Total SVVA		29	0.45%	50.83%
	TTPP	MPTO	24	0.37%	51.20%
	Total TTPP		24	0.37%	51.20%
	MPMG	SVMI	3	0.05%	51.24%
		SVVA	2	0.03%	51.27%
		SVBM	1	0.02%	51.29%
		SVMG	1	0.02%	51.31%
	Total MPMG		7	0.11%	51.31%
	SVBM	MPTO	1	0.02%	51.32%
	Total SVBM		1	0.02%	51.32%
	SVMT	MPTO	1	0.02%	51.34%
	Total SVMT		1	0.02%	51.34%
	MROC	SVMI	1	0.02%	51.35%
	Total MROC		1	0.02%	51.35%
	MRPV	SVVA	1	0.02%	51.37%
	Total MRPV		1	0.02%	51.37%
	SVMG	MPMG	1	0.02%	51.38%
	Total SVMG		1	0.02%	51.38%
Total UA553			**495**	**7.60%**	**51.38%**
UA321	MPTO	SAEZ	52	0.80%	52.18%
		SBGR	24	0.37%	52.55%
		SUMU	22	0.34%	52.89%
		SACO	17	0.26%	53.15%
		SLVR	12	0.18%	53.33%
		SEQU	3	0.05%	53.38%
		SBEG	2	0.03%	53.41%

		SBGL	2	0.03%	53.44%
		SEGY	1	0.02%	53.46%
		SPIM	1	0.02%	53.47%
		SBCF	1	0.02%	53.49%
		SCEL	1	0.02%	53.50%
		SCAR	1	0.02%	53.52%
	Total MPTO		139	2.14%	53.52%
	SAEZ	MPTO	73	1.12%	54.64%
		KIAH	26	0.40%	55.04%
		KDFW	13	0.20%	55.24%
		ZZZZ	1	0.02%	55.25%
		KDAL	1	0.02%	55.27%
	Total SAEZ		114	1.75%	55.27%
	SACO	MPTO	31	0.48%	55.75%
	Total SACO		31	0.48%	55.75%
	SUMU	MPTO	29	0.45%	56.19%
	Total SUMU		29	0.45%	56.19%
	KIAH	SAEZ	24	0.37%	56.56%
	Total KIAH		24	0.37%	56.56%
	SLVR	MPTO	17	0.26%	56.82%
	Total SLVR		17	0.26%	56.82%
	SPIM	EHAM	6	0.09%	56.91%
		MDSD	5	0.08%	56.99%
	Total SPIM		11	0.17%	56.99%
	KDFW	SAEZ	7	0.11%	57.10%
	Total KDFW		7	0.11%	57.10%
	SCEL	MPTO	2	0.03%	57.13%
		KMIA	2	0.03%	57.16%
	Total SCEL		4	0.06%	57.16%
	SCAR	KTEB	1	0.02%	57.17%
	Total SCAR		1	0.02%	57.17%
	SPQT	MPTO	1	0.02%	57.19%
	Total SPQT		1	0.02%	57.19%

	SLCB	KMIA	1	0.02%	57.20%
	Total SLCB		1	0.02%	57.20%
	KFLL	SPIM	1	0.02%	57.22%
	Total KFLL		1	0.02%	57.22%
	SARE	KDEN	1	0.02%	57.24%
	Total SARE		1	0.02%	57.24%
Total UA321			**381**	**5.85%**	**57.24%**
UL417	KMIA	SAEZ	116	1.78%	59.02%
		SLLP	16	0.25%	59.26%
		SUMU	11	0.17%	59.43%
		SLVR	7	0.11%	59.54%
		SGES	1	0.02%	59.55%
	Total KMIA		151	2.32%	59.55%
	SAEZ	KMIA	89	1.37%	60.92%
		KDFW	9	0.14%	61.06%
		KIAD	7	0.11%	61.17%
		KJFK	6	0.09%	61.26%
		KATL	5	0.08%	61.34%
		MUCC	4	0.06%	61.40%
		MUCL	4	0.06%	61.46%
		KIAH	4	0.06%	61.52%
	Total SAEZ		128	1.97%	61.52%
	SLVR	KMIA	27	0.41%	61.94%
	Total SLVR		27	0.41%	61.94%
	KATL	SAEZ	22	0.34%	62.27%
	Total KATL		22	0.34%	62.27%
	KIAD	SAEZ	15	0.23%	62.50%
	Total KIAD		15	0.23%	62.50%
	SLCB	KMIA	11	0.17%	62.67%
	Total SLCB		11	0.17%	62.67%
	SUMU	KMIA	5	0.08%	62.75%
	Total SUMU		5	0.08%	62.75%
	KJFK	SAEZ	1	0.02%	62.76%

	Total KJFK		1	0.02%	62.76%
	SABE	KFLL	1	0.02%	62.78%
	Total SABE		1	0.02%	62.78%
	SASJ	MYNN	1	0.02%	62.80%
	Total SASJ		1	0.02%	62.80%
	KFLL	SABE	1	0.02%	62.81%
	Total KFLL		1	0.02%	62.81%
	MYNN	SAZB	1	0.02%	62.83%
	Total MYNN		1	0.02%	62.83%
Total UL417			**364**	**5.59%**	**62.83%**
UA317	MPTO	SBGR	33	0.51%	63.33%
		SBGL	29	0.45%	63.78%
		SBCF	17	0.26%	64.04%
		SBEG	15	0.23%	64.27%
		SLVR	4	0.06%	64.33%
		SBFL	1	0.02%	64.35%
	Total MPTO		99	1.52%	64.35%
	SBGR	MMMX	52	0.80%	65.15%
		KIAH	30	0.46%	65.61%
		KDFW	8	0.12%	65.73%
		MPTO	4	0.06%	65.79%
		KMIA	1	0.02%	65.81%
	Total SBGR		95	1.46%	65.81%
	SBGL	MPTO	31	0.48%	66.28%
		ZZZZ	1	0.02%	66.30%
		KHOU	1	0.02%	66.31%
	Total SBGL		33	0.51%	66.31%
	MMMX	SBGR	30	0.46%	66.77%
	Total MMMX		30	0.46%	66.77%
	SBCF	MPTO	18	0.28%	67.05%
		KTUS	1	0.02%	67.07%
	Total SBCF		19	0.29%	67.07%

	SLVR	MPTO	1	0.02%	67.08%
	Total SLVR		1	0.02%	67.08%
	MROC	SBEG	1	0.02%	67.10%
	Total MROC		1	0.02%	67.10%
	SBFI	KMIA	1	0.02%	67.11%
	Total SBFI		1	0.02%	67.11%
	SBBR	KLAX	1	0.02%	67.13%
	Total SBBR		1	0.02%	67.13%
Total UA317			**280**	**4.30%**	**67.13%**
UA550	SEQU	SVMI	48	0.74%	67.86%
		TNCB	20	0.31%	68.17%
		KMIA	8	0.12%	68.29%
		MDPP	4	0.06%	68.36%
		MDPC	3	0.05%	68.40%
		TJSJ	2	0.03%	68.43%
		TNCC	2	0.03%	68.46%
		TFFR	1	0.02%	68.48%
		KJFK	1	0.02%	68.49%
	Total SEQU		89	1.37%	68.49%
	SEGY	LEMD	59	0.91%	69.40%
		MDPC	8	0.12%	69.52%
		SVMI	3	0.05%	69.57%
		TNCC	1	0.02%	69.59%
		KJFK	1	0.02%	69.60%
		MTPP	1	0.02%	69.62%
	Total SEGY		73	1.12%	69.62%
	SVMI	SEQU	55	0.84%	70.46%
		SEGY	6	0.09%	70.55%
	Total SVMI		61	0.94%	70.55%
	LEMD	SEQU	28	0.43%	70.98%
		SEGY	10	0.15%	71.14%
	Total LEMD		38	0.58%	71.14%

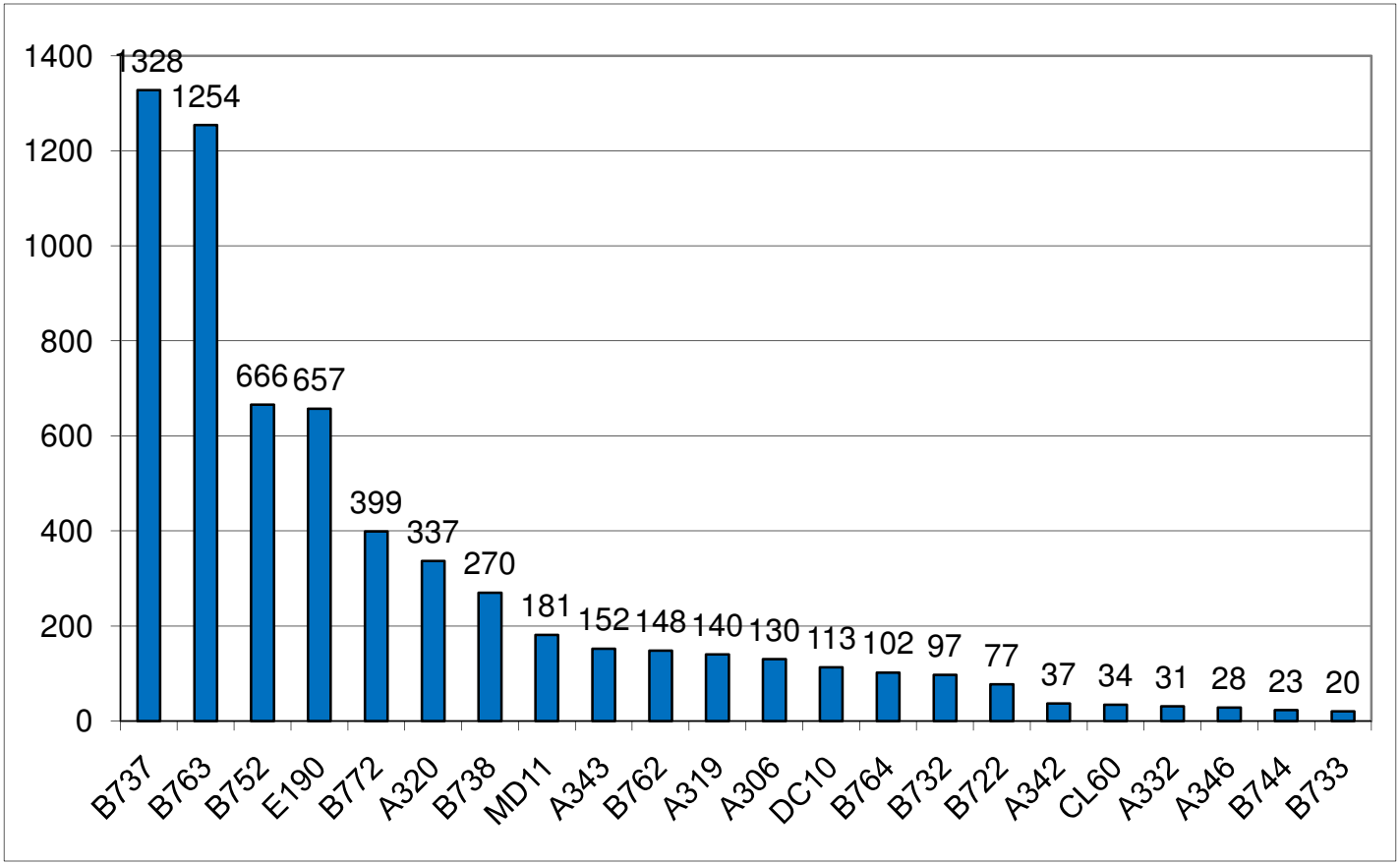
	SVVA	SEQU	5	0.08%	71.21%
	Total SVVA		5	0.08%	71.21%
	SPIM	MDLR	1	0.02%	71.23%
	Total SPIM		1	0.02%	71.23%
Total UA550			**267**	**4.10%**	**71.23%**
UM414	SPIM	SVMI	81	1.24%	72.47%
		EHAM	11	0.17%	72.64%
		LEMD	4	0.06%	72.70%
		TAPA	1	0.02%	72.72%
		TBPB	1	0.02%	72.73%
		LETO	1	0.02%	72.75%
	Total SPIM		99	1.52%	72.75%
	SVMI	SPIM	83	1.27%	74.02%
		SCEL	3	0.05%	74.07%
	Total SVMI		86	1.32%	74.07%
	EHAM	SPIM	8	0.12%	74.19%
	Total EHAM		8	0.12%	74.19%
	SCEL	SVMI	6	0.09%	74.29%
	Total SCEL		6	0.09%	74.29%
	LEMD	SPIM	5	0.08%	74.36%
	Total LEMD		5	0.08%	74.36%
	SVVA	SPIM	1	0.02%	74.38%
	Total SVVA		1	0.02%	74.38%
	SCDA	SVMI	1	0.02%	74.39%
	Total SCDA		1	0.02%	74.39%
	SPQT	LEBL	1	0.02%	74.41%
	Total SPQT		1	0.02%	74.41%
Total UM414			**207**	**3.18%**	**74.41%**
UM525	MPTO	TJSJ	58	0.89%	75.30%
		LEMD	10	0.15%	75.45%
		EHAM	1	0.02%	75.47%
	Total		69	1.06%	75.47%

	MPTO				
	TJSJ	MPTO	56	0.86%	76.33%
		MROC	1	0.02%	76.34%
	Total TJSJ		57	0.88%	76.34%
	LEMD	MROC	10	0.15%	76.50%
		SEQU	1	0.02%	76.51%
	Total LEMD		11	0.17%	76.51%
	MROC	TJSJ	4	0.06%	76.57%
	Total MROC		4	0.06%	76.57%
	EHAM	MPTO	4	0.06%	76.64%
	Total EHAM		4	0.06%	76.64%
Total UM525			**145**	**2.23%**	**76.64%**
UL655	SBGR	MPTO	61	0.94%	77.57%
		KLAX	25	0.38%	77.96%
		KATL	1	0.02%	77.97%
		MMMX	1	0.02%	77.99%
	Total SBGR		88	1.35%	77.99%
	KLAX	SBGR	24	0.37%	78.36%
	Total KLAX		24	0.37%	78.36%
	MMMX	SBGR	19	0.29%	78.65%
	Total MMMX		19	0.29%	78.65%
	SBKP	MMMX	9	0.14%	78.79%
		KSDM	1	0.02%	78.80%
	Total SBKP		10	0.15%	78.80%
	MROC	SLCB	1	0.02%	78.82%
	Total MROC		1	0.02%	78.82%
Total UL655			**142**	**2.18%**	**78.82%**
UA301	KMIA	SLVR	19	0.29%	79.11%
		SLLP	15	0.23%	79.34%
		SAEZ	14	0.22%	79.55%

		SUMU	8	0.12%	79.68%
		SGES	7	0.11%	79.78%
		MPTO	2	0.03%	79.82%
		SBGR	2	0.03%	79.85%
		SBFI	1	0.02%	79.86%
	Total KMIA		68	1.04%	79.86%
	SAEZ	KMIA	9	0.14%	80.00%
		KDFW	5	0.08%	80.08%
		KATL	4	0.06%	80.14%
		MPTO	1	0.02%	80.15%
	Total SAEZ		19	0.29%	80.15%
	SLVR	KMIA	10	0.15%	80.31%
	Total SLVR		10	0.15%	80.31%
	KATL	SAEZ	8	0.12%	80.43%
	Total KATL		8	0.12%	80.43%
	SBEG	SEQU	7	0.11%	80.54%
	Total SBEG		7	0.11%	80.54%
	SUMU	KMIA	3	0.05%	80.58%
	Total SUMU		3	0.05%	80.58%
	KDFW	SAEZ	3	0.05%	80.63%
	Total KDFW		3	0.05%	80.63%
	KJFK	SAEZ	3	0.05%	80.68%
	Total KJFK		3	0.05%	80.68%
	SOCA	SEQU	1	0.02%	80.69%
	Total SOCA		1	0.02%	80.69%
	KHPN	SAAR	1	0.02%	80.71%
	Total KHPN		1	0.02%	80.71%
	SBKP	SEQU	1	0.02%	80.72%
	Total SBKP		1	0.02%	80.72%
	KEWR	SPIM	1	0.02%	80.74%
	Total KEWR		1	0.02%	80.74%

	SBCT	SEQU	1	0.02%	80.75%
	Total SBCT		1	0.02%	80.75%
Total UA301			**126**	**1.94%**	**80.75%**

FIR BOGOTÁ/BARRANQUILLA - OPERADOR/TIPO DE AERONAVE

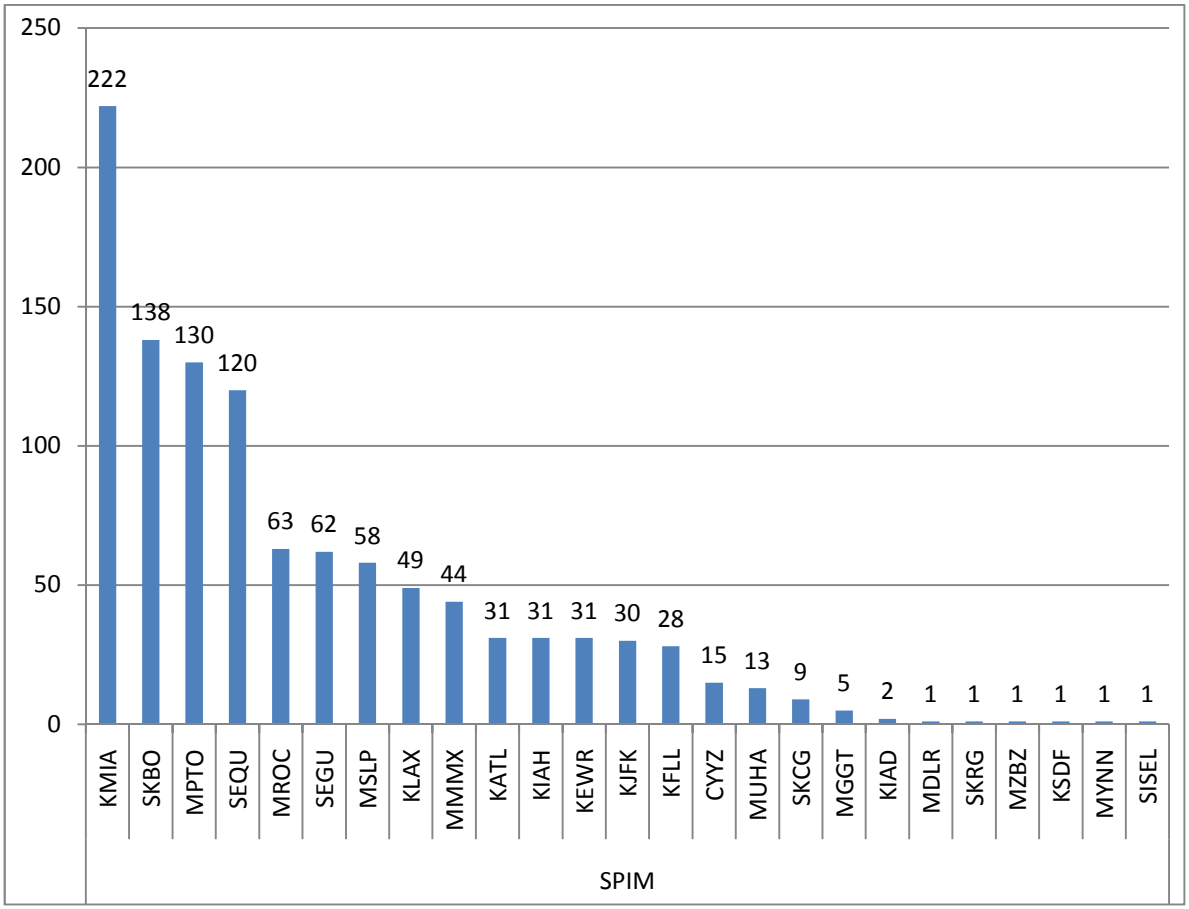


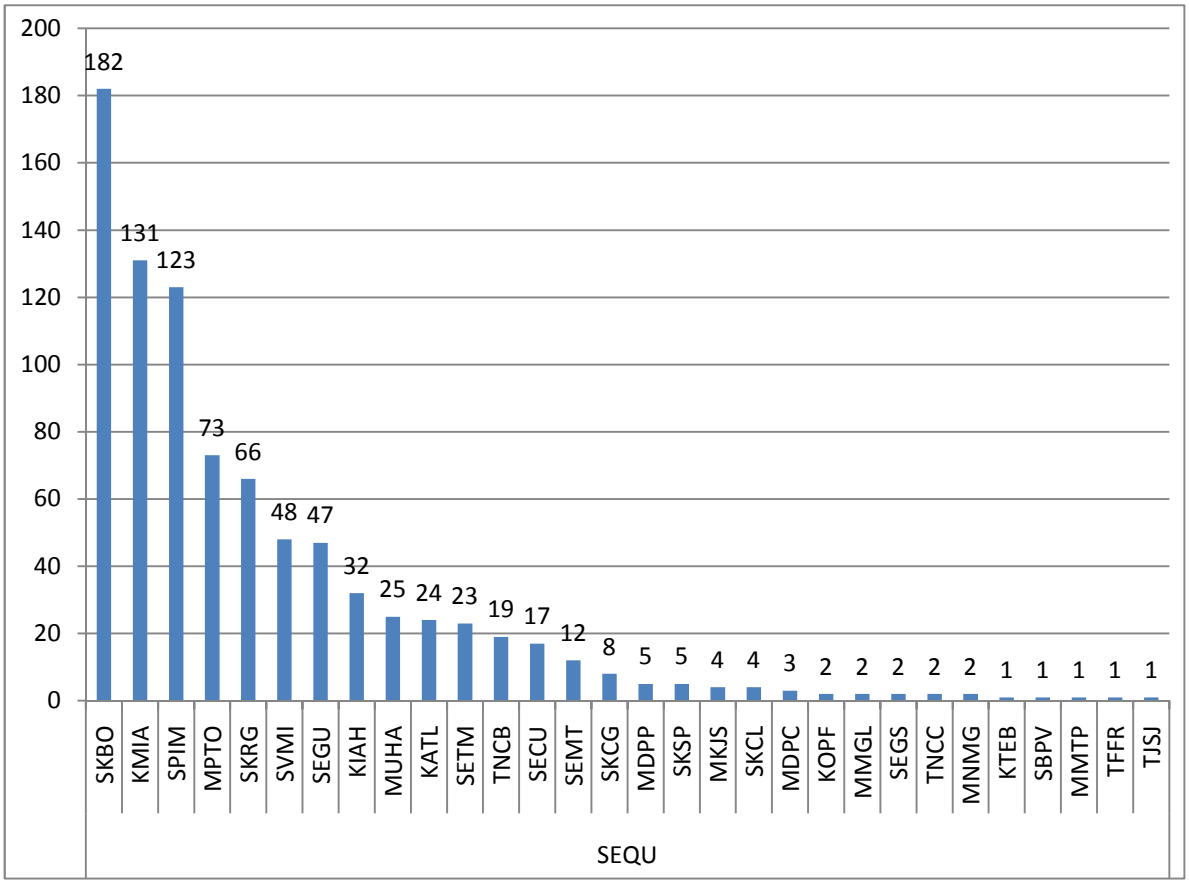
ECUADOR

Apéndice P

FIR Guayaquil

FIR GUAYAQUIL – PARES DE CIUDADES

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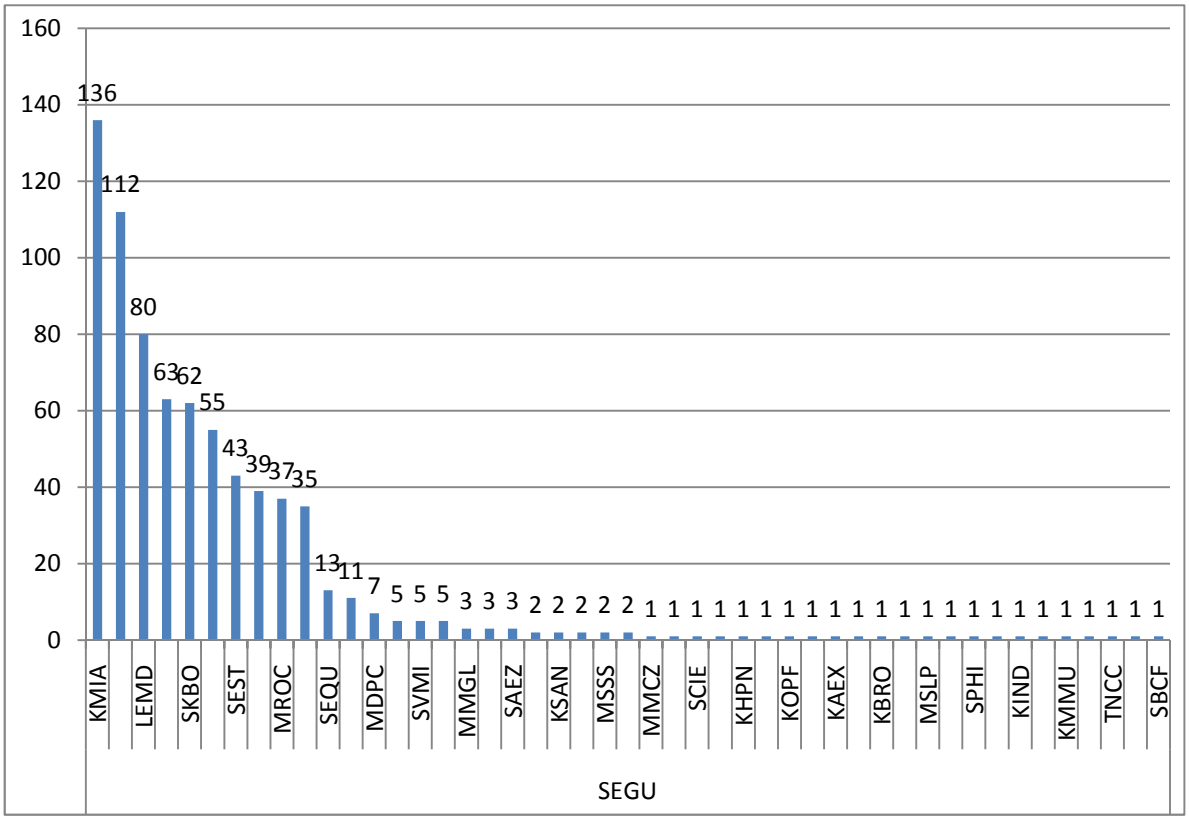
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TNCC
SBCF
SEGU

FIR GUAYAQUIL – ANÁLISIS DE RUTAS ATS

RUTA	Total	%	ACUMULADO	
UL780	963	16.98%	16.98%	**AIP**
UA550	925	16.31%	33.29%	
UG426	881	15.54%	48.83%	UA550
UG437	583	10.28%	59.11%	
UG436	406	7.16%	66.27%	
UG437/UL780	383	6.75%	73.02%	UA565
UW2	287	5.06%	78.08%	
UL305	266	4.69%	82.77%	UA566
UL308	182	3.21%	85.98%	UB696
UG439	93	1.64%	87.62%	
UG438	87	1.53%	89.16%	
UL401	72	1.27%	90.42%	UG426
UL344	67	1.18%	91.61%	UG436
UW5	66	1.16%	92.77%	UG437
UG437/UA550	51	0.90%	93.67%	
UA565	49	0.86%	94.53%	
UW1	46	0.81%	95.34%	
UM659	**40**	**0.71%**	**96.05%**	
UZ30	29	0.51%	96.56%	

UW21G	25	0.44%	97.00%		
UB696/UG437/UR564	22	0.39%	97.39%	UG437	UW7
UL312	21	0.37%	97.76%	UG438	
UL318/UG439	18	0.32%	98.08%	UG439	
UW6	17	0.30%	98.38%		
UG437/UR564	14	0.25%	98.62%		
UL780/UA550	10	0.18%	98.80%		UW122
UA550/UG426	9	0.16%	98.96%	UL305	
UG439/UG437	8	0.14%	99.10%	UL308	
UG439/UW122	6	0.11%	99.21%	UL312	
UZ30/UW21G	6	0.11%	99.31%	UL318	
UA566	5	0.09%	99.40%	UL344	
UG437/UG439	4	0.07%	99.47%	UL401	
UL780/UA550/UG426	3	0.05%	99.52%	UL780	
UM542/UG436	3	0.05%	99.58%		
UW7/UR564	2	0.04%	99.61%		
UW6/UW1	2	0.04%	99.65%		
UW7/UG437	2	0.04%	99.68%	UM542	
UG437/UW7	2	0.04%	99.72%	UM659	
UG439/UL780	2	0.04%	99.75%		
UB696	1	0.02%	99.77%	UR564	
UW1/UL780	1	0.02%	99.79%	UW1	
UL780/UW5	1	0.02%	99.81%		

UB696/UA550	1	0.02%	99.82%	UW2
UA565/UG439	1	0.02%	99.84%	
UW2/UG436	1	0.02%	99.86%	UW21G
UW6/UW7/UL318	1	0.02%	99.88%	
UA550/UL780	1	0.02%	99.89%	UW5
UG437/UW21G	1	0.02%	99.91%	UW6
UW21G/UW1	1	0.02%	99.93%	
UG437/UB696	1	0.02%	99.95%	
W2	1	0.02%	99.96%	UW7
UM659/UG437	1	0.02%	99.98%	UW7
UR564/UL780	1	0.02%	**100.00%**	UZ30
Total general	**5671**	**100.00%**		

UW23G

UW9

FIR GUAYAQUIL - PARES DE CIUDADES / RUTAS ATS

RUTA	ORIGEN	DESTINO	Total	%	ACUMULADO
UL780	SCEL	KMIA	73	1.29%	1.29%
		MPTO	57	1.01%	2.29%
		SEGU	42	0.74%	3.03%
		KATL	29	0.51%	3.54%
		KJFK	18	0.32%	3.86%
		CYYZ	6	0.11%	3.97%
		MUHA	4	0.07%	4.04%
		KDFW	2	0.04%	4.07%
		MTPP	2	0.04%	4.11%
		SEQU	1	0.02%	4.13%
	Total SCEL		234	4.13%	4.13%
	KMIA	SPIM	118	2.08%	6.21%
		SCEL	76	1.34%	7.55%
		SEGU	5	0.09%	7.64%
	Total KMIA		199	3.51%	7.64%
	SPIM	KMIA	87	1.53%	9.17%
		KJFK	30	0.53%	9.70%
		KATL	30	0.53%	10.23%
		KEWR	14	0.25%	10.47%
		MPTO	7	0.12%	10.60%
		KFLL	2	0.04%	10.63%
		SEQU	1	0.02%	10.65%
		CYYZ	1	0.02%	10.67%
	Total SPIM		172	3.03%	10.67%
	SEGU	SPIM	44	0.78%	11.44%
		SCEL	38	0.67%	12.11%
		KJFK	25	0.44%	12.56%
		KMIA	15	0.26%	12.82%

		KATL	5	0.09%	12.91%
		KFXE	2	0.04%	12.94%
		KFLL	1	0.02%	12.96%
	Total				
	SEGU		130	2.29%	12.96%
	MPTO	SCEL	61	1.08%	14.04%
		SPIM	3	0.05%	14.09%
	Total				
	MPTO		64	1.13%	14.09%
	KATL	SPIM	31	0.55%	14.64%
		SCEL	28	0.49%	15.13%
	Total				
	KATL		59	1.04%	15.13%
	KJFK	SPIM	31	0.55%	15.68%
		SCEL	16	0.28%	15.96%
		SEGU	5	0.09%	16.05%
		KMIA	1	0.02%	16.06%
	Total				
	KJFK		53	0.93%	16.06%
	KEWR	SPIM	32	0.56%	16.63%
	Total				
	KEWR		32	0.56%	16.63%
	CYYZ	SCEL	5	0.09%	16.72%
		SPIM	2	0.04%	16.75%
	Total				
	CYYZ		7	0.12%	16.75%
	KFLL	SEGU	2	0.04%	16.79%
	Total				
	KFLL		2	0.04%	16.79%
	SABE	SEGU	2	0.04%	16.82%
	Total				
	SABE		2	0.04%	16.82%
	KFXE	SPIM	1	0.02%	16.84%
		SEGU	1	0.02%	16.86%
	Total				
	KFXE		2	0.04%	16.86%
	MTPP	SCEL	2	0.04%	16.89%
	Total				
	MTPP		2	0.04%	16.89%

	KDFW	SCEL	1	0.02%	16.91%
	Total				
	KDFW		1	0.02%	16.91%
	KIAH	SCEL	1	0.02%	16.93%
	Total				
	KIAH		1	0.02%	16.93%
	SCAR	SEGU	1	0.02%	16.95%
	Total				
	SCAR		1	0.02%	16.95%
	SPUR	MPTO	1	0.02%	16.96%
	Total				
	SPUR		1	0.02%	16.96%
	MUHA	SCEL	1	0.02%	16.98%
	Total				
	MUHA		1	0.02%	16.98%
Total UL780			**963**	**16.98%**	**16.98%**
UA550	SEQU	SKBO	182	3.21%	20.19%
		SVMI	48	0.85%	21.04%
		SKRG	29	0.51%	21.55%
		KMIA	24	0.42%	21.97%
		TNCB	19	0.34%	22.31%
		MDPP	5	0.09%	22.39%
		MDPC	3	0.05%	22.45%
		TNCC	2	0.04%	22.48%
		SKCG	2	0.04%	22.52%
		SKCL	2	0.04%	22.55%
		TJSJ	1	0.02%	22.57%
		TFFR	1	0.02%	22.59%
		MPTO	1	0.02%	22.61%
	Total				
	SEQU		319	5.63%	22.61%
	SKBO	SEQU	141	2.49%	25.09%
		SEGU	59	1.04%	26.13%
	Total				
	SKBO		200	3.53%	26.13%
	SEGU	LEMD	80	1.41%	27.54%
		SKBO	62	1.09%	28.64%

		SEQU	12	0.21%	28.85%
		MDPC	7	0.12%	28.97%
		SVMI	5	0.09%	29.06%
		KJFK	4	0.07%	29.13%
		SKCL	2	0.04%	29.17%
		TNCC	1	0.02%	29.18%
		TJSJ	1	0.02%	29.20%
		SKRG	1	0.02%	29.22%
		MTPP	1	0.02%	29.24%
	Total SEGU		176	3.10%	29.24%
	LEMD	SEQU	48	0.85%	30.08%
		SEGU	32	0.56%	30.65%
	Total LEMD		80	1.41%	30.65%
	SVMI	SEQU	53	0.93%	31.58%
		SEGU	8	0.14%	31.72%
	Total SVMI		61	1.08%	31.72%
	SKRG	SEQU	23	0.41%	32.13%
	Total SKRG		23	0.41%	32.13%
	TNCB	SEGU	18	0.32%	32.45%
		SEQU	1	0.02%	32.46%
	Total TNCB		19	0.34%	32.46%
	MDPC	SEQU	7	0.12%	32.59%
		SEGU	4	0.07%	32.66%
	Total MDPC		11	0.19%	32.66%
	SKCL	SEQU	6	0.11%	32.76%
		SEGU	1	0.02%	32.78%
	Total SKCL		7	0.12%	32.78%
	SVVA	SEQU	5	0.09%	32.87%
		SEGU	1	0.02%	32.89%
	Total SVVA		6	0.11%	32.89%

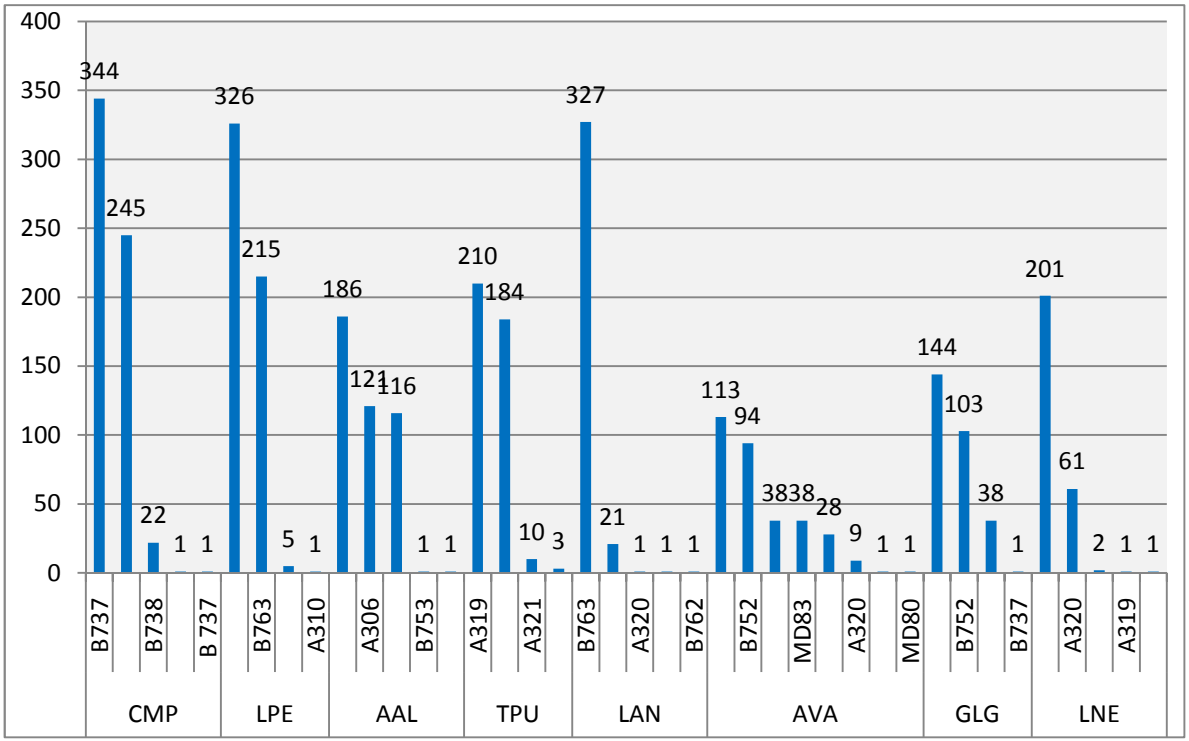
	MDPP	SEQU	5	0.09%	32.97%
	Total				
	MDPP		5	0.09%	32.97%
	TNCC	SEQU	2	0.04%	33.01%
		A320	1	0.02%	33.03%
		SEGU	1	0.02%	33.05%
	Total				
	TNCC		4	0.07%	33.05%
	SKCG	SEQU	4	0.07%	33.12%
	Total				
	SKCG		4	0.07%	33.12%
	SKBQ	SEQU	2	0.04%	33.15%
	Total				
	SKBQ		2	0.04%	33.15%
	MTPP	SEGU	2	0.04%	33.19%
	Total				
	MTPP		2	0.04%	33.19%
	KMIA	SEQU	2	0.04%	33.22%
	Total				
	KMIA		2	0.04%	33.22%
	MVMI	SEGU	1	0.02%	33.24%
	Total				
	MVMI		1	0.02%	33.24%
	SBCT	SEQU	1	0.02%	33.26%
	Total				
	SBCT		1	0.02%	33.26%
	KJFK	SEGU	1	0.02%	33.27%
	Total				
	KJFK		1	0.02%	33.27%
	LETO	SEQU	1	0.02%	33.29%
	Total				
	LETO		1	0.02%	33.29%
Total UA550			**925**	**16.31%**	**33.29%**
UG426	SEQU	SPIM	120	2.12%	35.41%
		KMIA	105	1.85%	37.26%
		MPTO	72	1.27%	38.53%
		MUHA	25	0.44%	38.97%
		KATL	16	0.28%	39.25%

		SKSP	5	0.09%	39.34%
		MKJS	4	0.07%	39.41%
		KOPF	2	0.04%	39.45%
		KTEB	1	0.02%	39.46%
	Total SEQU		350	6.17%	39.46%
	SPIM	SEQU	117	2.06%	41.53%
		KMIA	35	0.62%	42.14%
		MUHA	13	0.23%	42.37%
		MSLP	2	0.04%	42.41%
		MROC	2	0.04%	42.44%
		MPTO	2	0.04%	42.48%
		KIAD	2	0.04%	42.51%
		KSDF	1	0.02%	42.53%
		KFLL	1	0.02%	42.55%
		KIAH	1	0.02%	42.57%
		MYNN	1	0.02%	42.59%
		MGGT	1	0.02%	42.60%
		MMMX	1	0.02%	42.62%
	Total SPIM		179	3.16%	42.62%
	KMIA	SEQU	138	2.43%	45.05%
		SCEL	14	0.25%	45.30%
		SPIM	7	0.12%	45.42%
	Total KMIA		159	2.80%	45.42%
	MPTO	SEQU	70	1.23%	46.66%
		SCEL	5	0.09%	46.75%
		SPIM	3	0.05%	46.80%
		SEGU	1	0.02%	46.82%
	Total MPTO		79	1.39%	46.82%
	MUHA	SEQU	27	0.48%	47.29%
		SPIM	14	0.25%	47.54%
	Total MUHA		41	0.72%	47.54%
	SCEL	SEQU	18	0.32%	47.86%
		KDFW	1	0.02%	47.88%

		MWCR	1	0.02%	47.89%
		KMIA	1	0.02%	47.91%
		MPTO	1	0.02%	47.93%
	Total				
	SCEL		22	0.39%	47.93%
	KATL	SEQU	20	0.35%	48.28%
	Total				
	KATL		20	0.35%	48.28%
	SKSP	SEQU	6	0.11%	48.39%
	Total				
	SKSP		6	0.11%	48.39%
	MKJS	SEQU	4	0.07%	48.46%
	Total				
	MKJS		4	0.07%	48.46%
	SAEZ	SEQU	3	0.05%	48.51%
	Total				
	SAEZ		3	0.05%	48.51%
	MSLP	SPIM	3	0.05%	48.56%
	Total				
	MSLP		3	0.05%	48.56%
	CYYZ	SPIM	1	0.02%	48.58%
		SEQU	1	0.02%	48.60%
	Total				
	CYYZ		2	0.04%	48.60%
	MROC	SPIM	2	0.04%	48.63%
	Total				
	MROC		2	0.04%	48.63%
	KDFW	SCEL	1	0.02%	48.65%
	Total				
	KDFW		1	0.02%	48.65%
	KIAD	SPIM	1	0.02%	48.67%
	Total				
	KIAD		1	0.02%	48.67%
	MGGT	SPIM	1	0.02%	48.69%
	Total				
	MGGT		1	0.02%	48.69%
	MWCR	SCEL	1	0.02%	48.70%
	Total				
	MWCR		1	0.02%	48.70%

	KIAH	SPIM	1	0.02%	48.72%
	Total KIAH		1	0.02%	48.72%
	MYNN	SPIM	1	0.02%	48.74%
	Total MYNN		1	0.02%	48.74%
	SPHI	SEQU	1	0.02%	48.76%
	Total SPHI		1	0.02%	48.76%
	MMUN	SCEL	1	0.02%	48.77%
	Total MMUN		1	0.02%	48.77%
	SPZO	MPTO	1	0.02%	48.79%
	Total SPZO		1	0.02%	48.79%
	SCDA	SEQU	1	0.02%	48.81%
	Total SCDA		1	0.02%	48.81%
	MPMG	SPIM	1	0.02%	48.83%
	Total MPMG		1	0.02%	48.83%
Total UG426			**881**	**15.54%**	**48.83%**

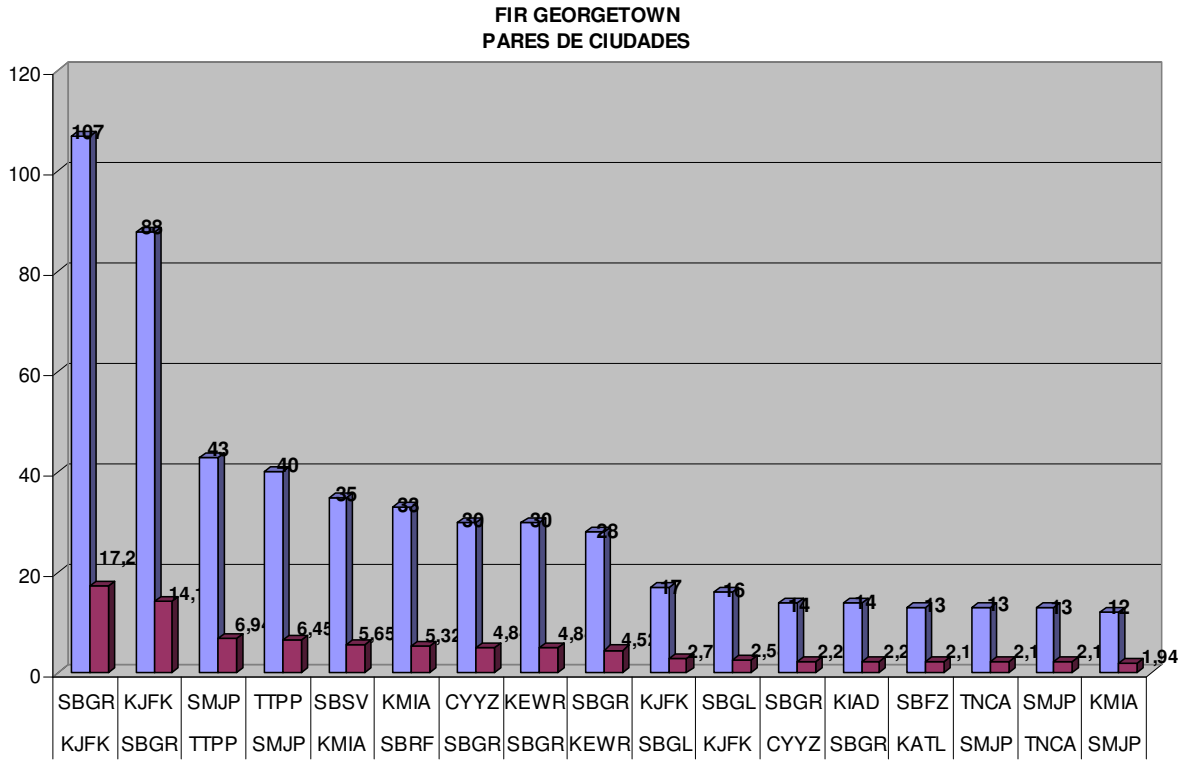
GUAYAQUIL - OPERADOR/TIPO DE AERONAVE



GUYANA

Apéndice Q

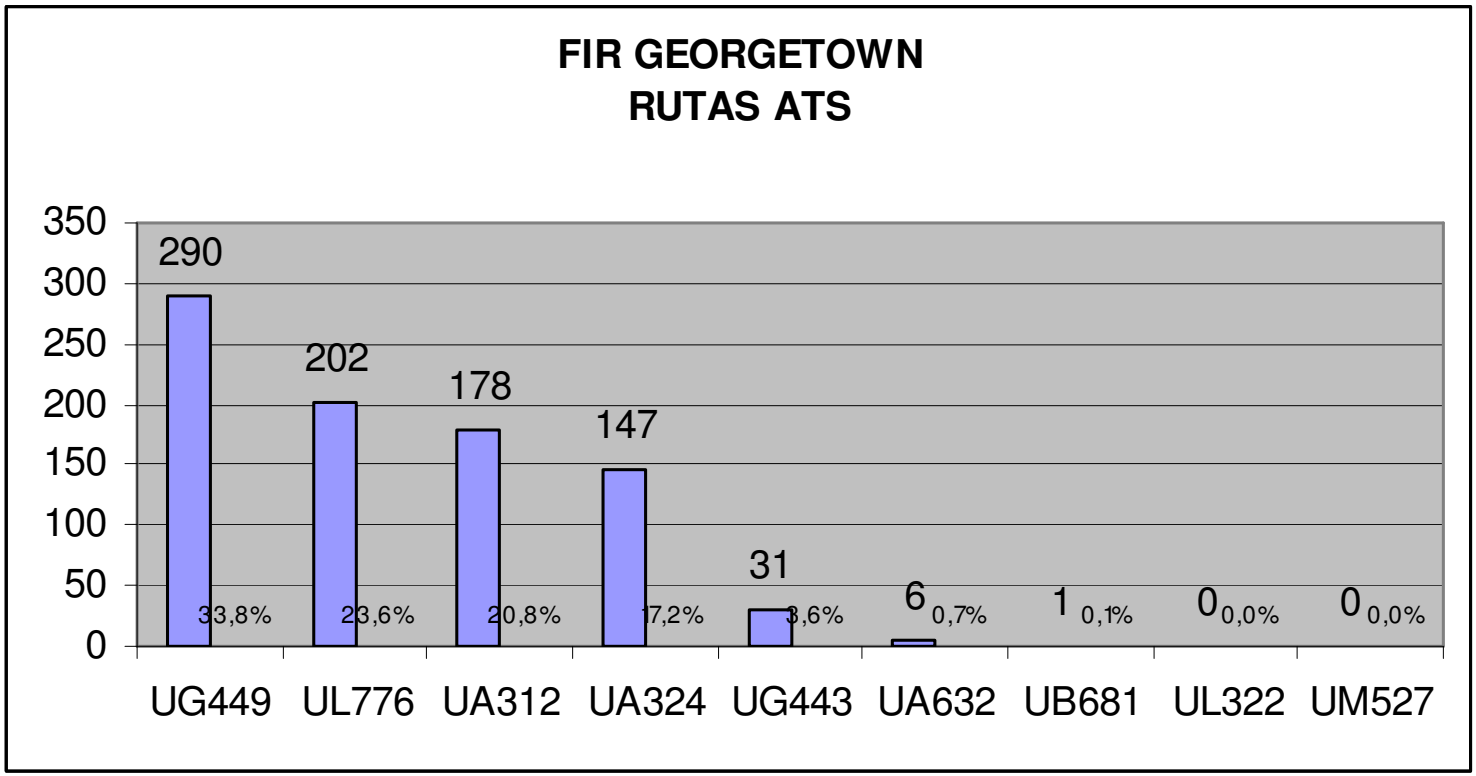
FIR Georgetown



Análisis Red de Rutas – FIR GEORGETOWN

Rutas FIR GEORGETOWN – AIP Brasil	RNAV	"Convencionales"
Internacionales	3	6
Nacionales	------	-----

Cartas DOD	AIRWAY	number of movements	percentage	cumulative percentage	OBS
UA312	UA312	178	20,770%	20,770%	
UA324	UA324	147	17,153%	37,923%	
	UA332	1	0,117%	38,040%	No existe en la carta DOD
	UA342	1	0,117%	38,156%	No existe en la carta DOD
UA632	UA632	6	0,700%	38,856%	
UB681	UB681	1	0,117%	38,973%	
UG443	UG443	31	3,617%	42,590%	
UG449	UG449	290	33,839%	76,429%	
UL322		0	0,000%	76,429%	
UL776	UL776	202	23,571%	100,000%	
UM527		0	0,000%	100,000%	


FIR GEORGETOWN
RUTAS ATS
350
300
250
200
150
100
50
0
290
33,8%
202
23,6%
178
20,8%
147
17,2%
31
3,6%
6
0,7%
1
0,1%
0
0,0%
0
0,0%
UG449
UL776
UA312
UA324
UG443
UA632
UB681
UL322
UM527

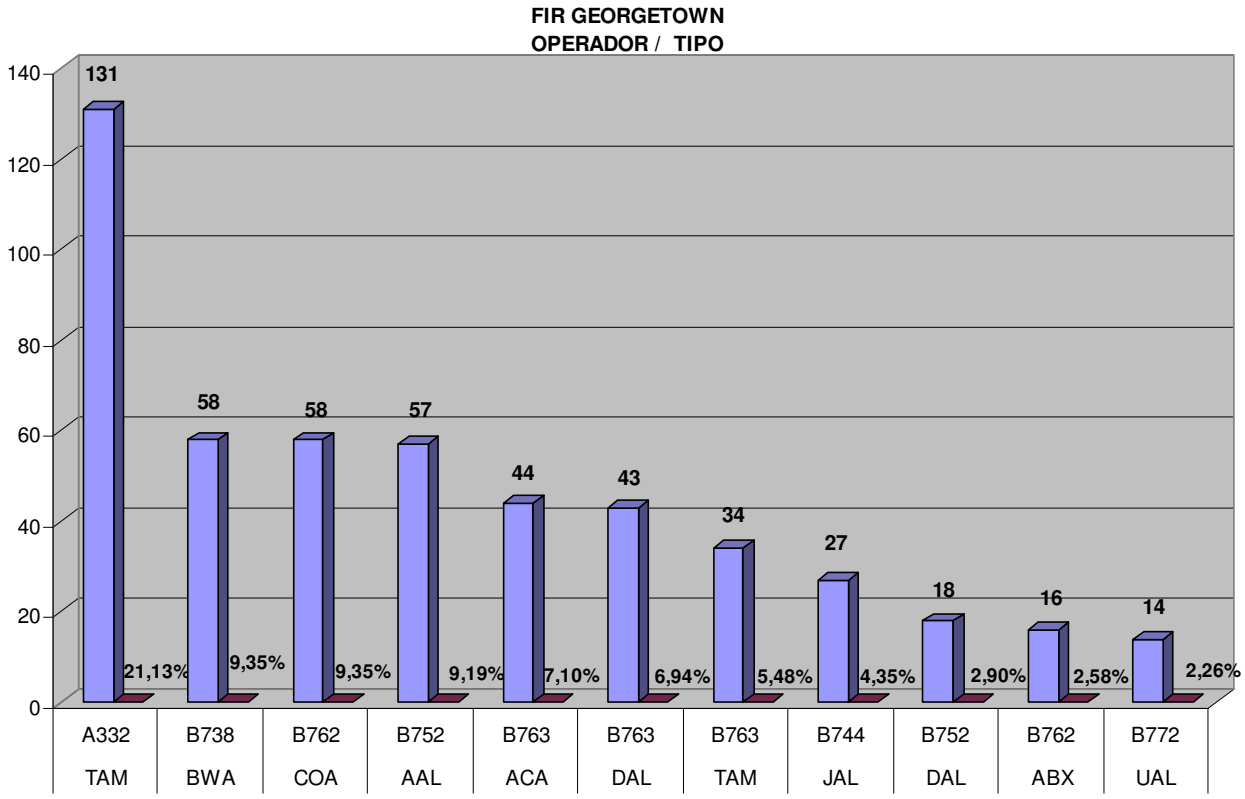
FIR Georgetown

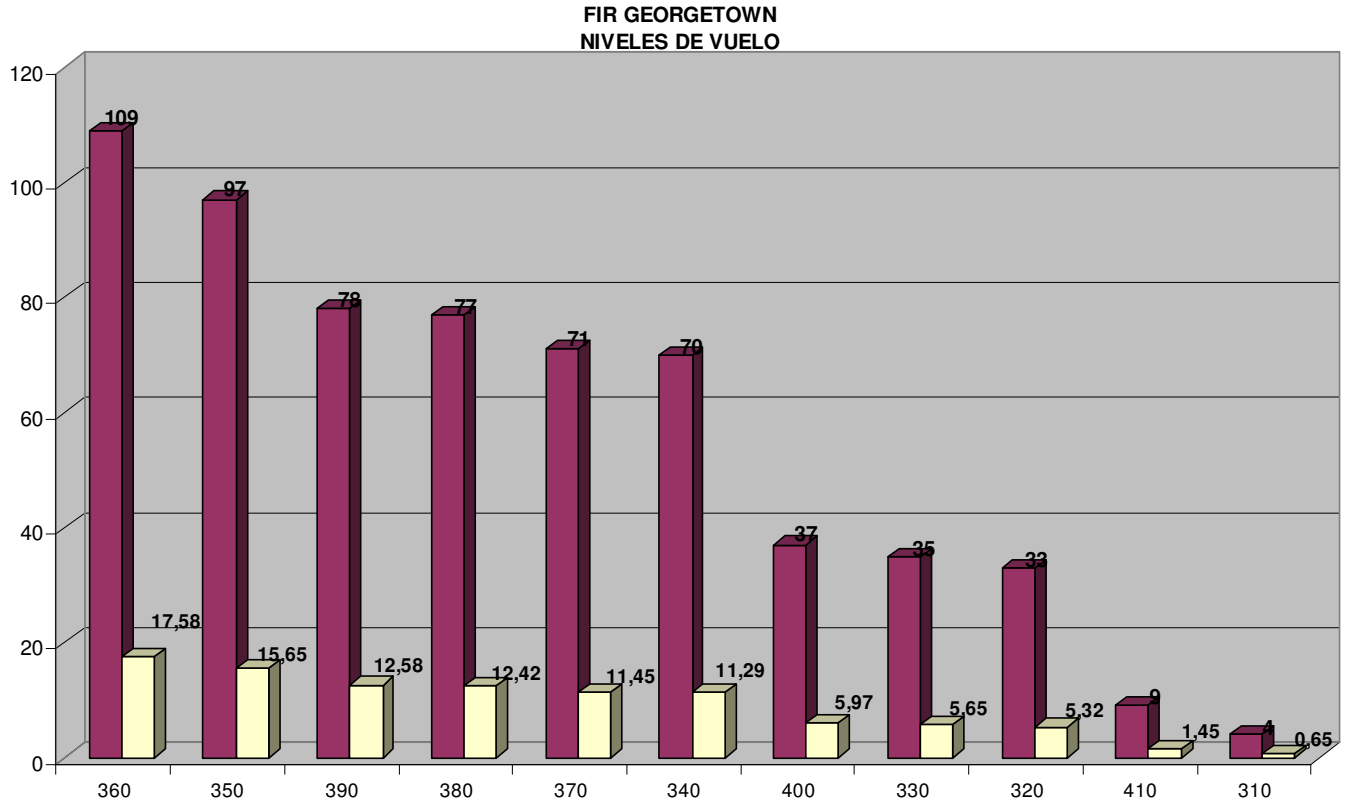
Pares de Ciudades servidos por Ruta ATS

UG449	KATL	SBFZ	13
		SBRF	2
	KATL Total		15
	KIAH	SOCA	1
	KIAH Total		1
	KMIA	SBFZ	1
		SBSV	35
		SMJP	3
	KMIA Total		39
	SBBE	TTPP	2
	SBBE Total		2
	SBFZ	KATL	4
		TJBQ	1
	SBFZ Total		5
	SBGL	KATL	1
		KGSO	1
	SBGL Total		2
	SBGR	KATL	2
		KIAD	13

	KJFK	57
	KORD	4
SBGR Total		76
SBRF	KMIA	32
SBRF Total		32
SBSV	KMIA	1
SBSV Total		1
SMJP	KMIA	12
	KPOB	1
	TNCC	7
	TTPP	40
SMJP Total		60
SOCA	KDEN	1
	KFLL	1
SOCA Total		2
TJBQ	SBFZ	1
TJBQ Total		1
TJSJ	SBSV	1
TJSJ Total		1
TNCC	SMJP	9
TNCC Total		9

	TTPP	SBNT	1
		SMJP	43
	TTPP Total		44
UG449 Total			290

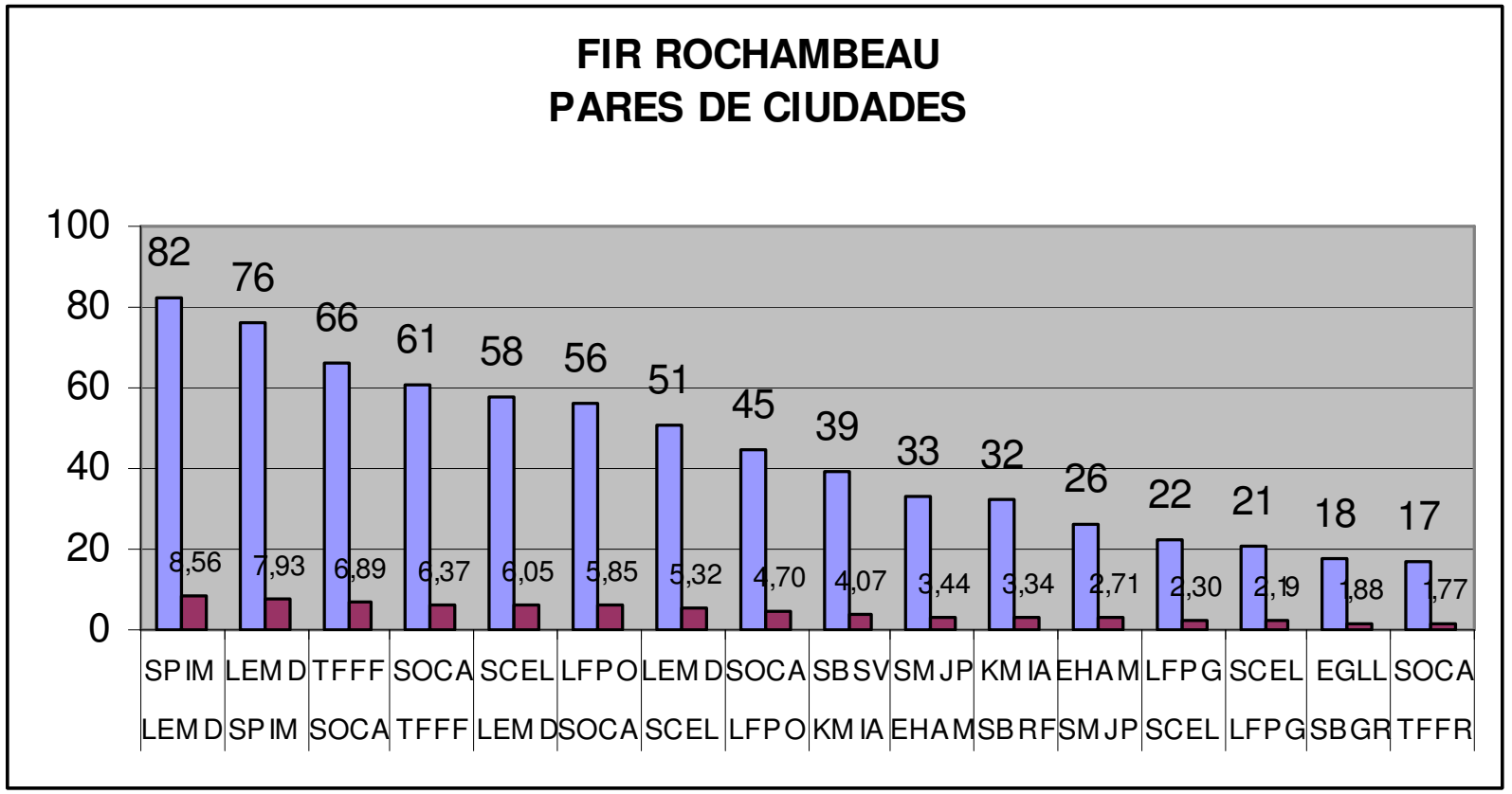

FIR GEORGETOWN
OPERADOR / TIPO
140
120
100
80
60
40
20
0
131
58
58
57
44
43
34
27
18
16
14
21,13%
9,35%
9,35%
9,19%
7,10%
6,94%
5,48%
4,35%
2,90%
2,58%
2,26%
A332 TAM
B738 BWA
B762 COA
B752 AAL
B763 ACA
B763 DAL
B763 TAM
B744 JAL
B752 DAL
B762 ABX
B772 UAL


FIR GEORGETOWN
NIVELES DE VUELO
120
100
80
60
40
20
0
109
17,58
97
15,65
78
12,58
77
12,42
71
11,45
70
11,29
37
5,97
35
5,65
33
5,32
9
1,45
4
0,65
360
350
390
380
370
340
400
330
320
410
310

FRENCH GUYANA

Apéndice R

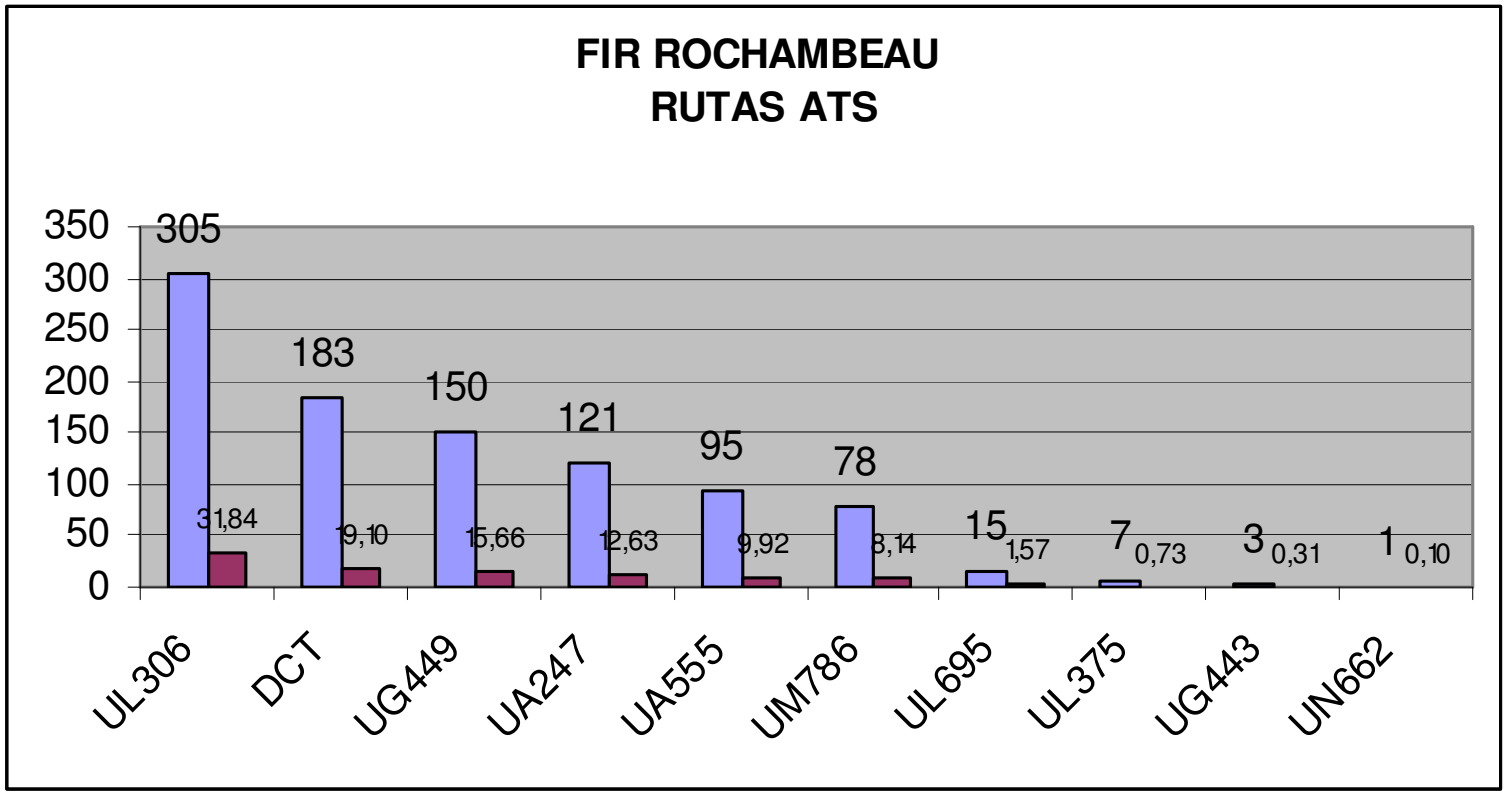
FIR Rochambeau



Análisis Red de Rutas – FIR ROCHAMBEAU

Rutas FIR ROCHAMBEAU – AIP Brasil	RNAV	"Convencionales"
Internacionales	4	5
Nacionales	------	-----

Chart DOD	AIRWAY	Number of movements	percentage	Cumulative Percentage	Remarks
	DCT	183	19,10	19,10	
UA247	UA247	121	12,63	31,73	
UA555	UA555	95	9,92	41,65	
UB680		0			
UG443	UG443	3	0,31	41,96	
UG449	UG449	150	15,66	57,62	
UL306	UL306	305	31,84	89,46	
UL375	UL375	7	0,73	90,19	
UL695	UL695	15	1,57	91,75	
UM786	UM786	78	8,14	99,90	
	UN662	1	0,10	100,00	No existe en la carta DOD

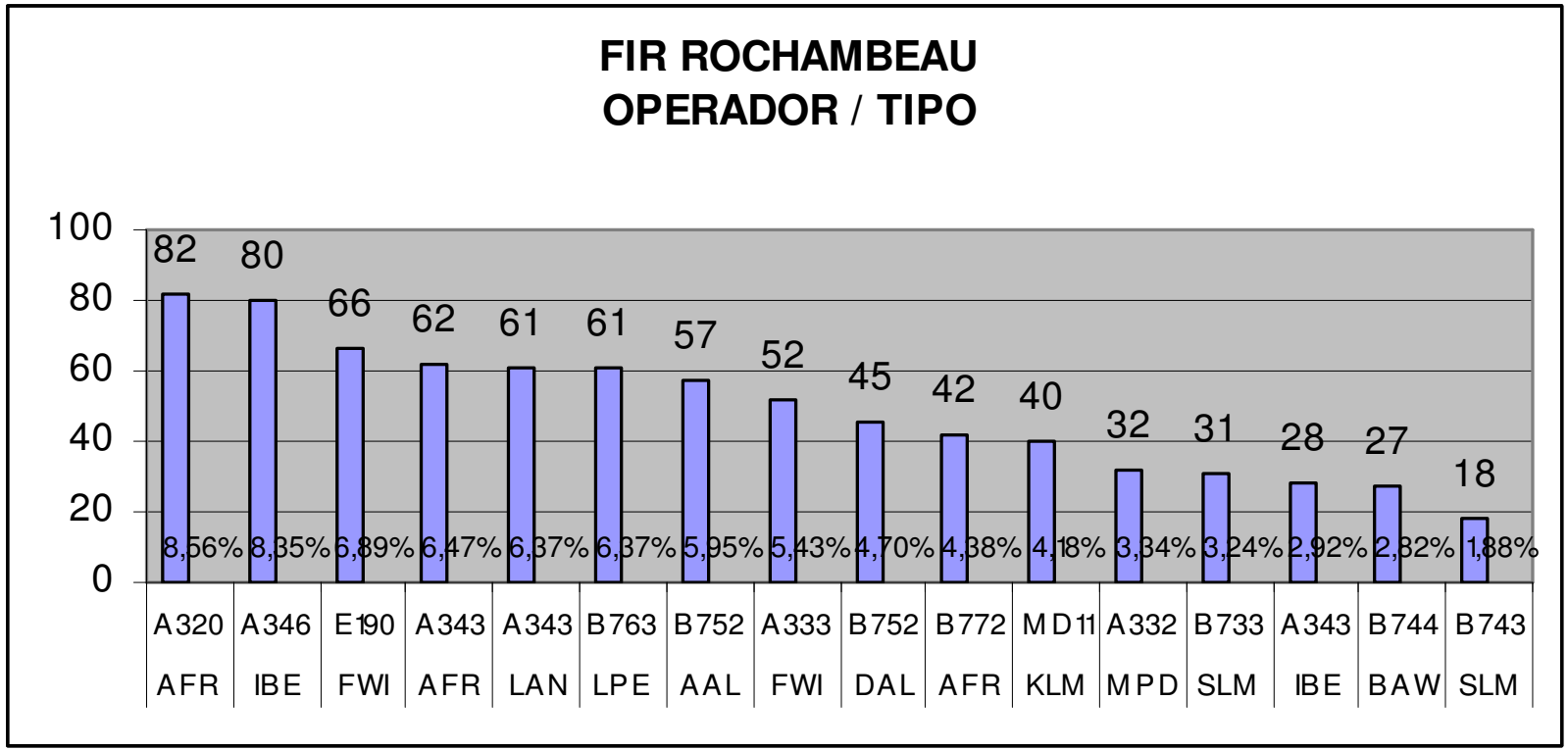

FIR ROCHAMBEAU
RUTAS ATS
350
300
250
200
150
100
50
0
305
31,84
183
19,10
150
15,66
121
12,63
95
9,92
78
8,14
15
1,57
7
0,73
3
0,31
1
0,10
UL306
DCT
UG449
UA247
UA555
UM786
UL695
UL375
UG443
UN662

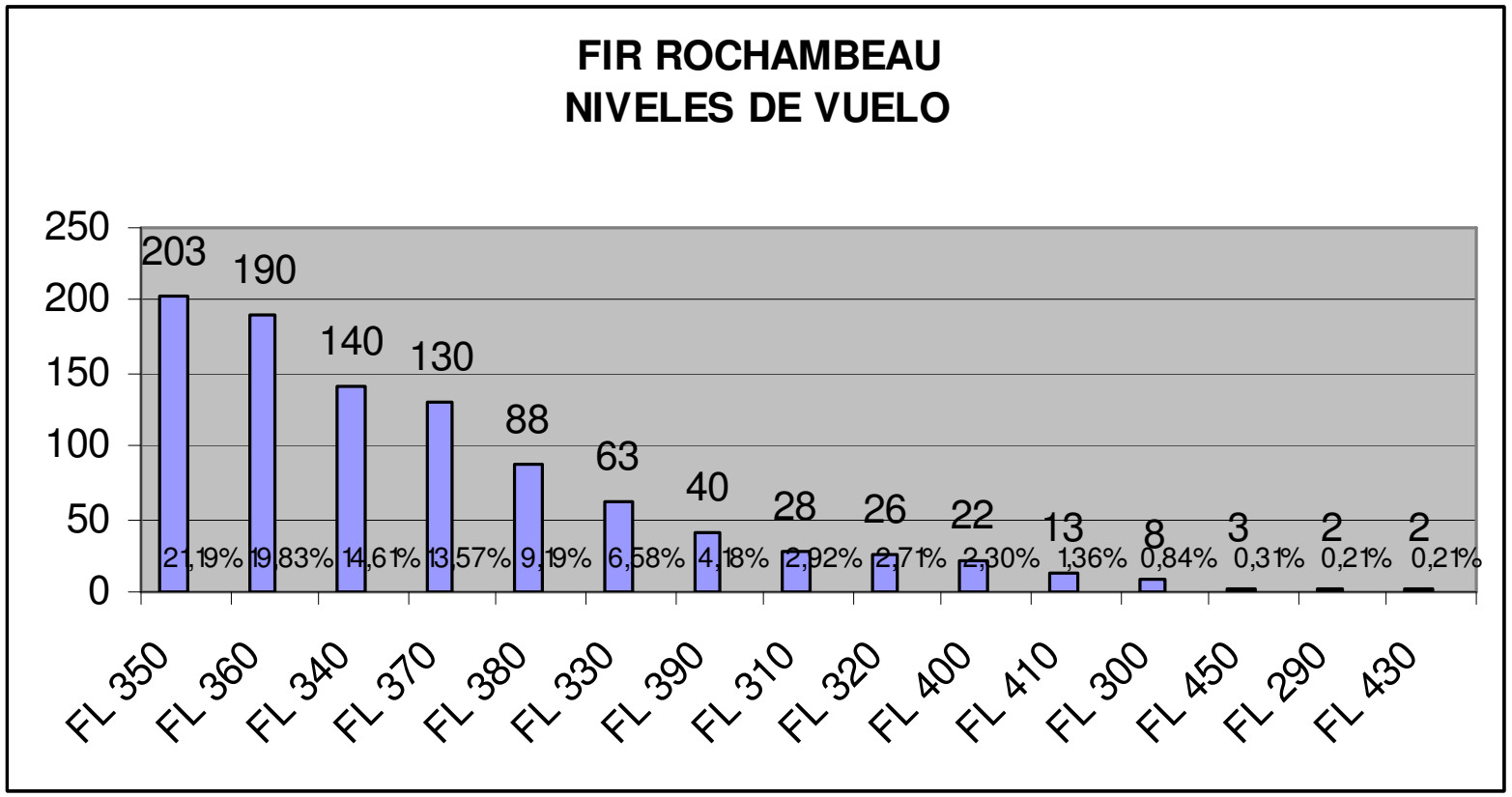
FIR Rochambeau

Pares de Ciudades servidos por Ruta ATS

UL306	EHAM	SPIM	4
	EHAM Total		4
	KATL	SBFZ	1
	KATL Total		1
	LEMD	SCEL	58
		SLVR	5
		SPIM	82
	LEMD Total		145
	LFPG	SCEL	21
	LFPG Total		21
	SBRF	KMIA	1
	SBRF Total		1
	SCEL	LEMD	51
		LFPG	22
	SCEL Total		73
	SLVR	LEMD	7
	SLVR Total		7
	SOCA	SEQU	1
	SOCA Total		1

	SPIM	LEMD	49
		LETO	1
		SCEL	1
	SPIM Total		51
	TTPP	SBNT	1
	TTPP Total		1
UL306 Total			305


FIR ROCHAMBEAU
OPERADOR / TIPO
100
80
60
40
20
0
82
80
66
62
61
61
57
52
45
42
40
32
31
28
27
18
8,56%
8,35%
6,89%
6,47%
6,37%
6,37%
5,95%
5,43%
4,70%
4,38%
4,18%
3,34%
3,24%
2,92%
2,82%
1,88%
A320 AFR
A346 IBE
E190 FWI
A343 AFR
A343 LAN
B763 LPE
B752 AAL
A333 FWI
B752 DAL
B772 AFR
MD11 KLM
A332 MPD
B733 SLM
A343 IBE
B744 BAW
B743 SLM

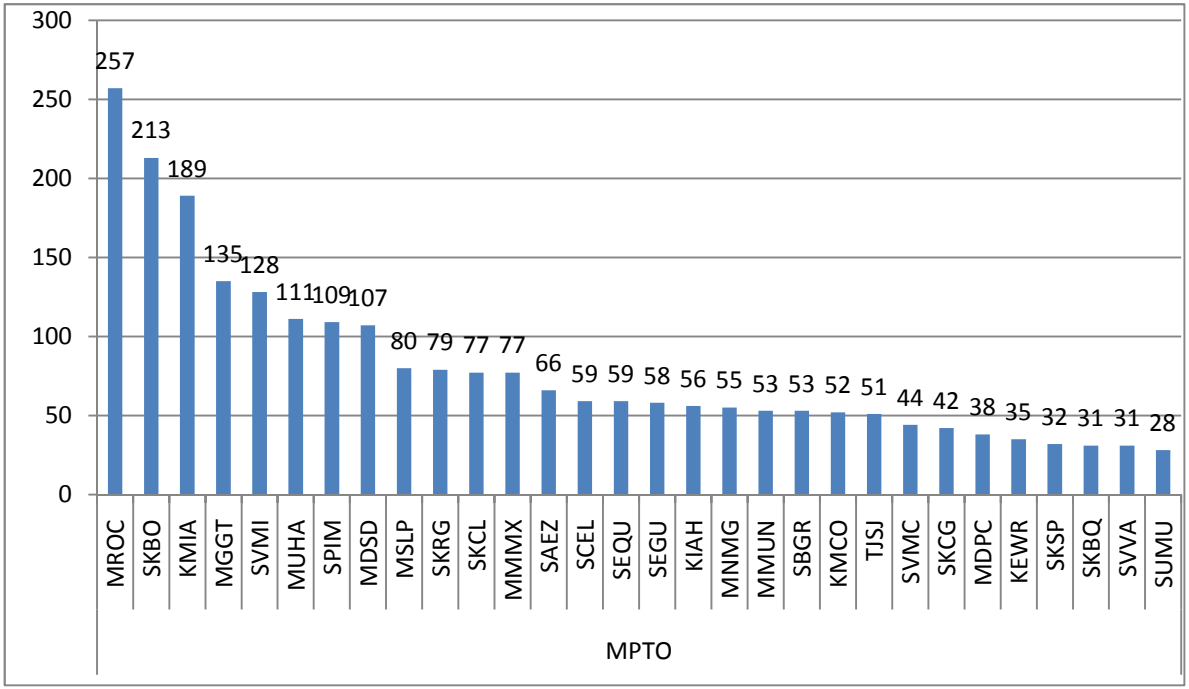

FIR ROCHAMBEAU
NIVELES DE VUELO
250
200
150
100
50
0
203
190
140
130
88
63
40
28
26
22
13
8
3
2
2
21,19%
19,83%
14,61%
13,57%
9,19%
6,58%
4,18%
2,92%
2,71%
2,30%
1,36%
0,84%
0,31%
0,21%
0,21%
FL 350
FL 360
FL 340
FL 370
FL 380
FL 330
FL 390
FL 310
FL 320
FL 400
FL 410
FL 300
FL 450
FL 290
FL 430

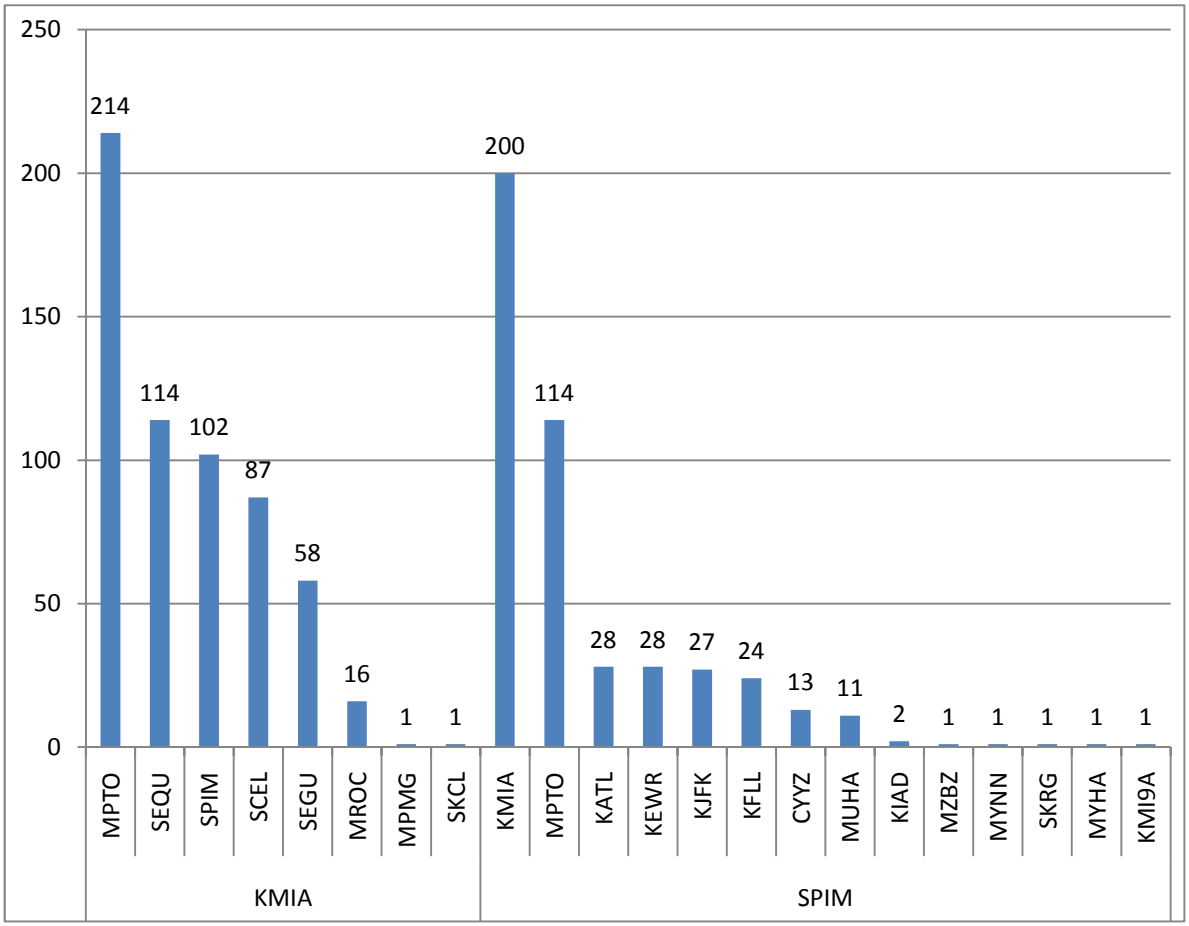
PANAMA

Apéndice S

FIR Panamá

FIR PANAMÁ – PARES DE CIUDADES




250
200
150
100
50
0
214
114
102
87
58
16
1
1
200
114
28
28
27
24
13
11
2
1
1
1
1
1
MPTO
SEQU
SPIM
SCEL
SEGU
MROC
MPMG
SKCL
KMIA
MPTO
KATL
KEWR
KJFK
KFLL
CYYZ
MUHA
KIAD
MZBZ
MYNN
SKRG
MYHA
KMI9A
KMIA
SPIM

FIR PANAMÁ – ANÁLISIS DE RUTAS ATS

RUTA	Total	%	ACUMULADO	
UA317	1324	13.86%	13.86%	
UL780	1063	11.13%	24.98%	
UA321	843	8.82%	33.81%	
UG440	560	5.86%	39.67%	
UL465	484	5.07%	44.74%	
UG437	455	4.76%	49.50%	
UA319	445	4.66%	54.16%	
UA553	431	4.51%	58.67%	
UB689	318	3.33%	61.99%	
UA574	245	2.56%	64.56%	
UG437/UL465	216	2.26%	66.82%	
UL423	191	2.00%	68.82%	
UA323	189	1.98%	70.80%	
UM419	188	1.97%	72.77%	
UG447	179	1.87%	74.64%	UR505
UG426	168	1.76%	76.40%	UV11
UA552/UA321	133	1.39%	77.79%	UV16
UG426/UL465	116	1.21%	79.00%	UV18
UM525	104	1.09%	80.09%	UV20
UL780/UL465	95	0.99%	81.09%	
UG439	94	0.98%	82.07%	
UG447/UA552	93	0.97%	83.04%	
UL465/UG426	92	0.96%	84.01%	
UG445	88	0.92%	84.93%	
UA321/UA552	85	0.89%	85.82%	
UL465/UG437	71	0.74%	86.56%	
UG437/UG426	70	0.73%	87.29%	
UL655	69	0.72%	88.02%	
UG426/UG437	67	0.70%	88.72%	
UM782	66	0.69%	89.41%	
UG434	**66**	**0.69%**	**90.10%**	

FIR PANAMÁ - PARES DE CIUDADES / RUTAS ATS

RUTA	ORIGEN	DESTINO	Total	%	ACUMULADO
UA317	MPTO	SKBO	194	2.03%	2.03%
		MGGT	122	1.28%	3.31%
		MSLP	73	0.76%	4.07%
		MNMG	50	0.52%	4.59%
		SBGR	27	0.28%	4.88%
		MMMX	25	0.26%	5.14%
		SBGL	22	0.23%	5.37%
		MROC	17	0.18%	5.55%
		SBEG	16	0.17%	5.71%
		SBCF	12	0.13%	5.84%
		SLVR	4	0.04%	5.88%
		SKBQ	3	0.03%	5.91%
		MHLM	2	0.02%	5.93%
		SKRG	1	0.01%	5.95%
		KIAH	1	0.01%	5.96%
		MMCZ	1	0.01%	5.97%
		SKPE	1	0.01%	5.98%
	Total MPTO		571	5.98%	5.98%
	SKBO	MPTO	248	2.60%	8.57%
		MPMG	8	0.08%	8.66%
		KLAX	4	0.04%	8.70%
		MMMX	3	0.03%	8.73%
	Total SKBO		263	2.75%	8.73%
	MGGT	MPTO	138	1.44%	10.17%
		MPMG	1	0.01%	10.18%
	Total MGGT		139	1.45%	10.18%
	MSLP	MPTO	79	0.83%	11.01%
		MPMG	1	0.01%	11.02%
	Total MSLP		80	0.84%	11.02%
	MNMG	MPTO	61	0.64%	11.66%
		SKBO	1	0.01%	11.67%
		MPMG	1	0.01%	11.68%
	Total MNMG		63	0.66%	11.68%

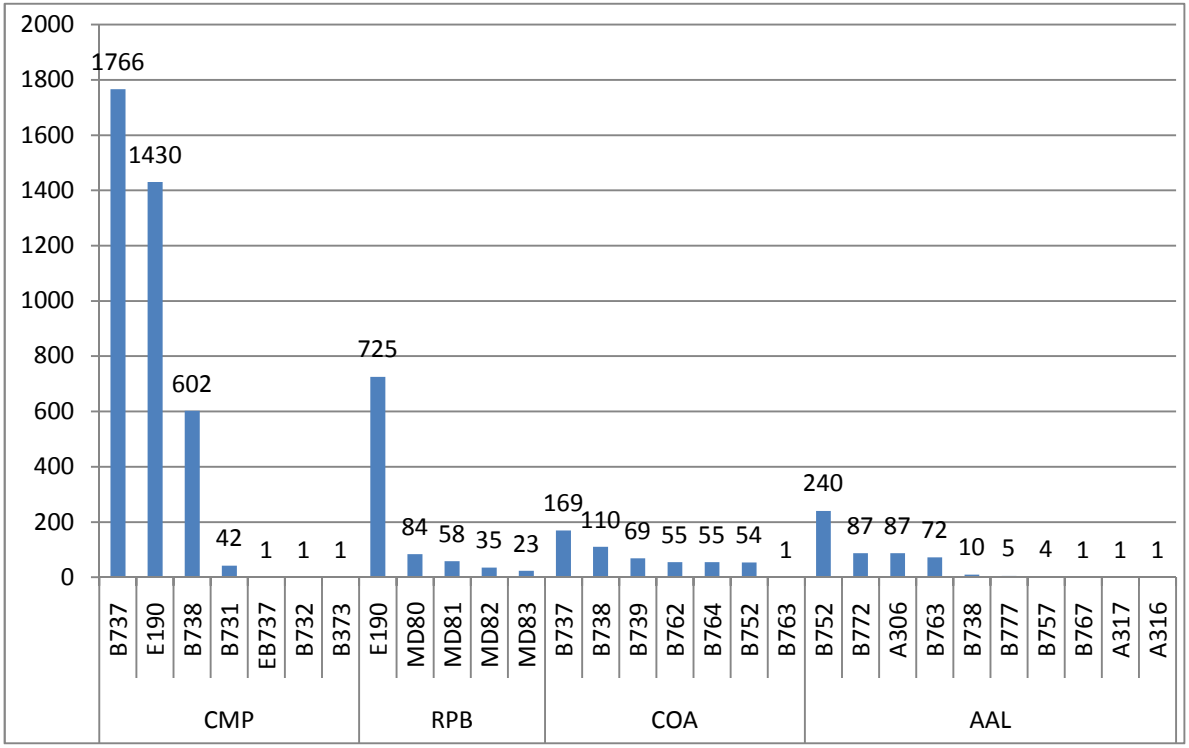
	MMMX	SBGR	27	0.28%	11.96%
		SKBO	25	0.26%	12.23%
		MPTO	8	0.08%	12.31%
	Total MMMX		60	0.63%	12.31%
	SBGR	MMMX	29	0.30%	12.61%
		MPTO	4	0.04%	12.65%
	Total SBGR		33	0.35%	12.65%
	SBGL	MPTO	27	0.28%	12.94%
	Total SBGL		27	0.28%	12.94%
	MMGL	MPTO	22	0.23%	13.17%
	Total MMGL		22	0.23%	13.17%
	SBCF	MPTO	17	0.18%	13.35%
	Total SBCF		17	0.18%	13.35%
	MPMG	SKBO	10	0.10%	13.45%
		MSSS	2	0.02%	13.47%
		MGGT	2	0.02%	13.49%
		MNMG	2	0.02%	13.51%
	Total MPMG		16	0.17%	13.51%
	SBEG	MPTO	14	0.15%	13.66%
	Total SBEG		14	0.15%	13.66%
	MSSS	MPMG	4	0.04%	13.70%
	Total MSSS		4	0.04%	13.70%
	KLAX	MPTO	3	0.03%	13.73%
		SKBO	1	0.01%	13.74%
	Total KLAX		4	0.04%	13.74%
	MROC	MPTO	4	0.04%	13.78%
	Total MROC		4	0.04%	13.78%
	SKRG	MPTO	3	0.03%	13.82%
	Total SKRG		3	0.03%	13.82%
	SKBG	MPTO	1	0.01%	13.83%
	Total SKBG		1	0.01%	13.83%
	SVMI	MPTO	1	0.01%	13.84%
	Total SVMI		1	0.01%	13.84%
	KMIA	MPTO	1	0.01%	13.85%
	Total KMIA		1	0.01%	13.85%

	SKCL	MPTO	1	0.01%	13.86%
	Total SKCL		1	0.01%	13.86%
Total UA317			**1324**	**13.86%**	**13.86%**
UL780	KMIA	MPTO	115	1.20%	15.06%
		SPIM	97	1.02%	16.08%
		SCEL	71	0.74%	16.82%
		SEGU	9	0.09%	16.91%
		SEQU	1	0.01%	16.92%
	Total KMIA		293	3.07%	16.92%
	MPTO	SPIM	94	0.98%	17.91%
		KMIA	53	0.55%	18.46%
		SCEL	50	0.52%	18.99%
		KIAD	22	0.23%	19.22%
		KJFK	22	0.23%	19.45%
		SEGU	1	0.01%	19.46%
		SBGL	1	0.01%	19.47%
		KFLL	1	0.01%	19.48%
		MUHA	1	0.01%	19.49%
	Total MPTO		245	2.56%	19.49%
	SPIM	MPTO	104	1.09%	20.58%
		KMIA	64	0.67%	21.25%
		KJFK	27	0.28%	21.53%
		KEWR	12	0.13%	21.66%
		CYYZ	5	0.05%	21.71%
		KMI9A	1	0.01%	21.72%
	Total SPIM		213	2.23%	21.72%
	SCEL	MPTO	48	0.50%	22.22%
		KMIA	28	0.29%	22.51%
		KJFK	16	0.17%	22.68%
		CYYZ	10	0.10%	22.79%
		KATL	9	0.09%	22.88%
		KDFW	1	0.01%	22.89%
	Total SCEL		112	1.17%	22.89%
	KJFK	MPTO	28	0.29%	23.18%
		SPIM	28	0.29%	23.48%
		SCEL	14	0.15%	23.62%

		SEGU	4	0.04%	23.67%
	Total KJFK		74	0.77%	23.67%
	SEGU	KJFK	21	0.22%	23.89%
		KMIA	11	0.12%	24.00%
		KJKF	1	0.01%	24.01%
		KFXE	1	0.01%	24.02%
		KFLL	1	0.01%	24.03%
	Total SEGU		35	0.37%	24.03%
	KIAD	MPTO	27	0.28%	24.31%
	Total KIAD		27	0.28%	24.31%
	KEWR	SPIM	27	0.28%	24.60%
	Total KEWR		27	0.28%	24.60%
	CYYZ	SCEL	13	0.14%	24.73%
		SPIM	5	0.05%	24.79%
	Total CYYZ		18	0.19%	24.79%
	MUHA	MPTO	5	0.05%	24.84%
		SCEL	1	0.01%	24.85%
	Total MUHA		6	0.06%	24.85%
	KMCO	MPTO	4	0.04%	24.89%
	Total KMCO		4	0.04%	24.89%
	KATL	SCEL	1	0.01%	24.90%
		MPTO	1	0.01%	24.91%
	Total KATL		2	0.02%	24.91%
	KFLL	SEGU	1	0.01%	24.92%
	Total KFLL		1	0.01%	24.92%
	KPBI	MPMG	1	0.01%	24.93%
	Total KPBI		1	0.01%	24.93%
	KFXE	SPIM	1	0.01%	24.94%
	Total KFXE		1	0.01%	24.94%
	MPMG	KOPF	1	0.01%	24.95%
	Total MPMG		1	0.01%	24.95%
	SEQU	KMIA	1	0.01%	24.96%
	Total SEQU		1	0.01%	24.96%
	KADW	MPTO	1	0.01%	24.97%
	Total KADW		1	0.01%	24.97%
	SAEZ	MPTO	1	0.01%	24.98%

	Total SAEZ		1	0.01%	24.98%
Total UL780			**1063**	**11.13%**	**24.98%**

FIR PANAMÁ - OPERADOR/TIPO DE AERONAVE



FIR PANAMÁ - PARES DE CIUDADES / RUTAS ATS

RUTA	ORIGEN	DESTINO	Total	%	ACUMULADO
UV10	SPIM	SPZO	548	5.61%	5.61%
		SPHO	33	0.34%	5.95%
		SPTU	2	0.02%	5.97%
	Total				
	SPIM		583	5.97%	5.97%
	SPZO	SPTU	115	1.18%	7.15%
		SPIM	1	0.01%	7.16%
	Total				
	SPZO		116	1.19%	7.16%
	SPTU	SPZO	110	1.13%	8.28%
		SPIM	1	0.01%	8.29%
	Total				
	SPTU		111	1.14%	8.29%
	SPHO	SPIM	24	0.25%	8.54%
		SPZO	1	0.01%	8.55%
	Total				
	SPHO		25	0.26%	8.55%
Total UV10			**835**	**8.55%**	**8.55%**
UV1	SPIM	SPUR	109	1.12%	9.67%
		SPRU	91	0.93%	10.60%
		SPHI	81	0.83%	11.43%
		SPTN	51	0.52%	11.95%
		SPYL	3	0.03%	11.98%
		SPJN	1	0.01%	11.99%
		SPLO	1	0.01%	12.00%
		SPTP	1	0.01%	12.01%
	Total				
	SPIM		338	3.46%	12.01%
	SPUR	SPIM	109	1.12%	13.13%
		SPRU	2	0.02%	13.15%
	Total				
	SPUR		111	1.14%	13.15%
	SPRU	SPIM	90	0.92%	14.07%

		SPUR	2	0.02%	14.09%
	Total				
	SPRU		92	0.94%	14.09%
	SPHI	SPIM	89	0.91%	15.00%
	Total				
	SPHI		89	0.91%	15.00%
	SPTN	SPIM	51	0.52%	15.52%
	Total				
	SPTN		51	0.52%	15.52%
	SPYL	SPIM	2	0.02%	15.54%
	Total				
	SPYL		2	0.02%	15.54%
	SPSO	SPIM	1	0.01%	15.55%
	Total				
	SPSO		1	0.01%	15.55%
Total UV1			**684**	**7.00%**	**15.55%**
UV11	SPZO	SPIM	560	5.73%	21.29%
		SPJL	56	0.57%	21.86%
	Total				
	SPZO		616	6.31%	21.86%
	SPJL	SPZO	28	0.29%	22.15%
	Total SPJL		28	0.29%	22.15%
Total UV11			**644**	**6.59%**	**22.15%**
UG437	SPIM	MPTO	120	1.23%	23.37%
		SEGU	63	0.65%	24.02%
		SPJR	61	0.62%	24.64%
		KMIA	48	0.49%	25.14%
		SKBO	42	0.43%	25.57%
		KEWR	17	0.17%	25.74%
		CYYZ	15	0.15%	25.89%
		SEQU	1	0.01%	25.90%
		MZBZ	1	0.01%	25.91%
	Total				
	SPIM		368	3.77%	25.91%
	MPTO	SPIM	117	1.20%	27.11%
	Total		117	1.20%	27.11%

	MPTO				
	SPJR	SPIM	63	0.65%	27.76%
	Total				
	SPJR		63	0.65%	27.76%
	CYYZ	SPIM	12	0.12%	27.88%
	Total				
	CYYZ		12	0.12%	27.88%
	SEGU	SPIM	11	0.11%	27.99%
	Total				
	SEGU		11	0.11%	27.99%
	SKBO	SPIM	6	0.06%	28.05%
	Total				
	SKBO		6	0.06%	28.05%
	SEQU	SPIM	1	0.01%	28.06%
	Total				
	SEQU		1	0.01%	28.06%
	MDPC	SPIM	1	0.01%	28.07%
	Total				
	MDPC		1	0.01%	28.07%
	MROC	SPIM	1	0.01%	28.08%
	Total				
	MROC		1	0.01%	28.08%
Total UG437			**580**	**5.94%**	**28.08%**
UL780	SCEL	KMIA	80	0.82%	28.90%
		MPTO	63	0.65%	29.55%
		SEGU	42	0.43%	29.98%
		KATL	29	0.30%	30.28%
		KJFK	18	0.18%	30.46%
		SEQU	11	0.11%	30.57%
		CYYZ	6	0.06%	30.63%
		MUHA	4	0.04%	30.67%
		KDFW	3	0.03%	30.71%
		MTPP	2	0.02%	30.73%
	Total				
	SCEL		258	2.64%	30.73%
	KMIA	SCEL	70	0.72%	31.44%
	Total		70	0.72%	31.44%

	KMIA				
	MPTO	SCEL	62	0.63%	32.08%
	Total				
	MPTO		62	0.63%	32.08%
	SEGU	SCEL	42	0.43%	32.51%
	Total				
	SEGU		42	0.43%	32.51%
	KATL	SCEL	29	0.30%	32.80%
	Total				
	KATL		29	0.30%	32.80%
	KJFK	SCEL	17	0.17%	32.98%
	Total				
	KJFK		17	0.17%	32.98%
	CYYZ	SCEL	7	0.07%	33.05%
	Total				
	CYYZ		7	0.07%	33.05%
	SPRU	MPTO	1	0.01%	33.06%
	Total				
	SPRU		1	0.01%	33.06%
	MTPP	SCEL	1	0.01%	33.07%
	Total				
	MTPP		1	0.01%	33.07%
	MUHA	SCEL	1	0.01%	33.08%
	Total				
	MUHA		1	0.01%	33.08%
Total UL780			**488**	**5.00%**	**33.08%**
UV12	SPIM	SPQU	242	2.48%	35.56%
		SPLC	3	0.03%	35.59%
		SPEQ	1	0.01%	35.60%
	Total				
	SPIM		246	2.52%	35.60%
	SPQU	SPIM	215	2.20%	37.80%
	Total				
	SPQU		215	2.20%	37.80%
	SPEQ	SPIM	2	0.02%	37.82%
	Total		2	0.02%	37.82%

	SPEQ				
	SPLC	SPIM	2	0.02%	37.84%
	Total				
	SPLC		2	0.02%	37.84%
	SPVR	SPIM	1	0.01%	37.85%
	Total				
	SPVR		1	0.01%	37.85%
Total UV12			**466**	**4.77%**	**37.85%**
UL302	SCEL	SPIM	213	2.18%	40.03%
	Total				
	SCEL		213	2.18%	40.03%
	SPIM	SCEL	180	1.84%	41.88%
		SAEZ	26	0.27%	42.14%
		SCSE	1	0.01%	42.15%
	Total				
	SPIM		207	2.12%	42.15%
	SAEZ	SPIM	24	0.25%	42.40%
	Total				
	SAEZ		24	0.25%	42.40%
	SCSE	SPIM	1	0.01%	42.41%
	Total				
	SCSE		1	0.01%	42.41%
	SAMA	SPIM	1	0.01%	42.42%
	Total				
	SAMA		1	0.01%	42.42%
	SAME	SPIM	1	0.01%	42.43%
	Total				
	SAME		1	0.01%	42.43%
Total UL302			**447**	**4.58%**	**42.43%**
UG431	SPIM	SPST	98	1.00%	43.43%
		SKBO	69	0.71%	44.14%
		EHAM	21	0.22%	44.35%
		MDSD	14	0.14%	44.50%
		SKRG	4	0.04%	44.54%
		KFLL	1	0.01%	44.55%

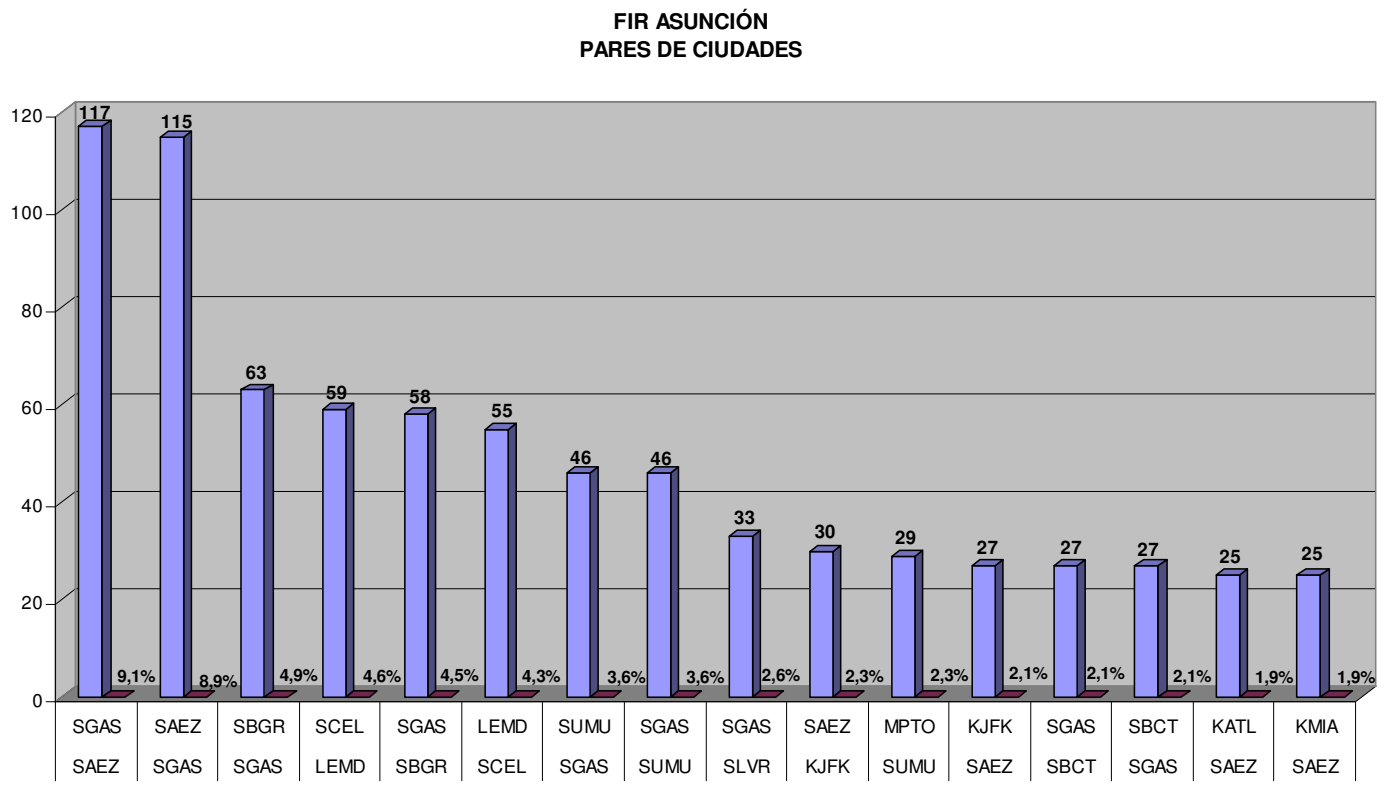
		SKCL	1	0.01%	44.56%
	Total				
	SPIM		208	2.13%	44.56%
	SPST	SPIM	99	1.01%	45.57%
	Total				
	SPST		99	1.01%	45.57%
	SKBO	SPIM	62	0.63%	46.21%
	Total				
	SKBO		62	0.63%	46.21%
	EHAM	SPIM	19	0.19%	46.40%
	Total				
	EHAM		19	0.19%	46.40%
	MDSD	SPIM	13	0.13%	46.53%
	Total				
	MDSD		13	0.13%	46.53%
	KFLL	SPIM	4	0.04%	46.58%
	Total				
	KFLL		4	0.04%	46.58%
	SKRG	SPIM	3	0.03%	46.61%
	Total				
	SKRG		3	0.03%	46.61%
	SKCL	SPIM	3	0.03%	46.64%
	Total				
	SKCL		3	0.03%	46.64%
	MPTO	SPIM	2	0.02%	46.66%
	Total				
	MPTO		2	0.02%	46.66%
	SVMI	SPIM	1	0.01%	46.67%
	Total				
	SVMI		1	0.01%	46.67%
	KMIA	SPIM	1	0.01%	46.68%
	Total				
	KMIA		1	0.01%	46.68%
Total UG431			**415**	**4.25%**	**46.68%**
UL550	SPIM	SAEZ	142	1.45%	48.13%
		SCDA	21	0.22%	48.35%
		SUMU	17	0.17%	48.52%

		SGAS	2	0.02%	48.54%
		SACO	2	0.02%	48.56%
		SCEL	2	0.02%	48.58%
		SASA	1	0.01%	48.59%
	Total				
	SPIM		187	1.91%	48.59%
	SAEZ	SPIM	151	1.55%	50.14%
	Total				
	SAEZ		151	1.55%	50.14%
	SCDA	SPIM	24	0.25%	50.38%
	Total				
	SCDA		24	0.25%	50.38%
	SUMU	SPIM	18	0.18%	50.57%
	Total				
	SUMU		18	0.18%	50.57%
	SAME	SPIM	9	0.09%	50.66%
	Total				
	SAME		9	0.09%	50.66%
	SCEL	SPIM	5	0.05%	50.71%
	Total				
	SCEL		5	0.05%	50.71%
	SBGR	SPIM	1	0.01%	50.72%
	Total				
	SBGR		1	0.01%	50.72%
	SACO	SPIM	1	0.01%	50.73%
	Total				
	SACO		1	0.01%	50.73%
	SABE	SPIM	1	0.01%	50.74%
	Total				
	SABE		1	0.01%	50.74%
	SBFI	SPIM	1	0.01%	50.75%
	Total SBFI		1	0.01%	50.75%
Total UL550			**398**	**4.07%**	**50.75%**

PARAGUAY

Apéndice T

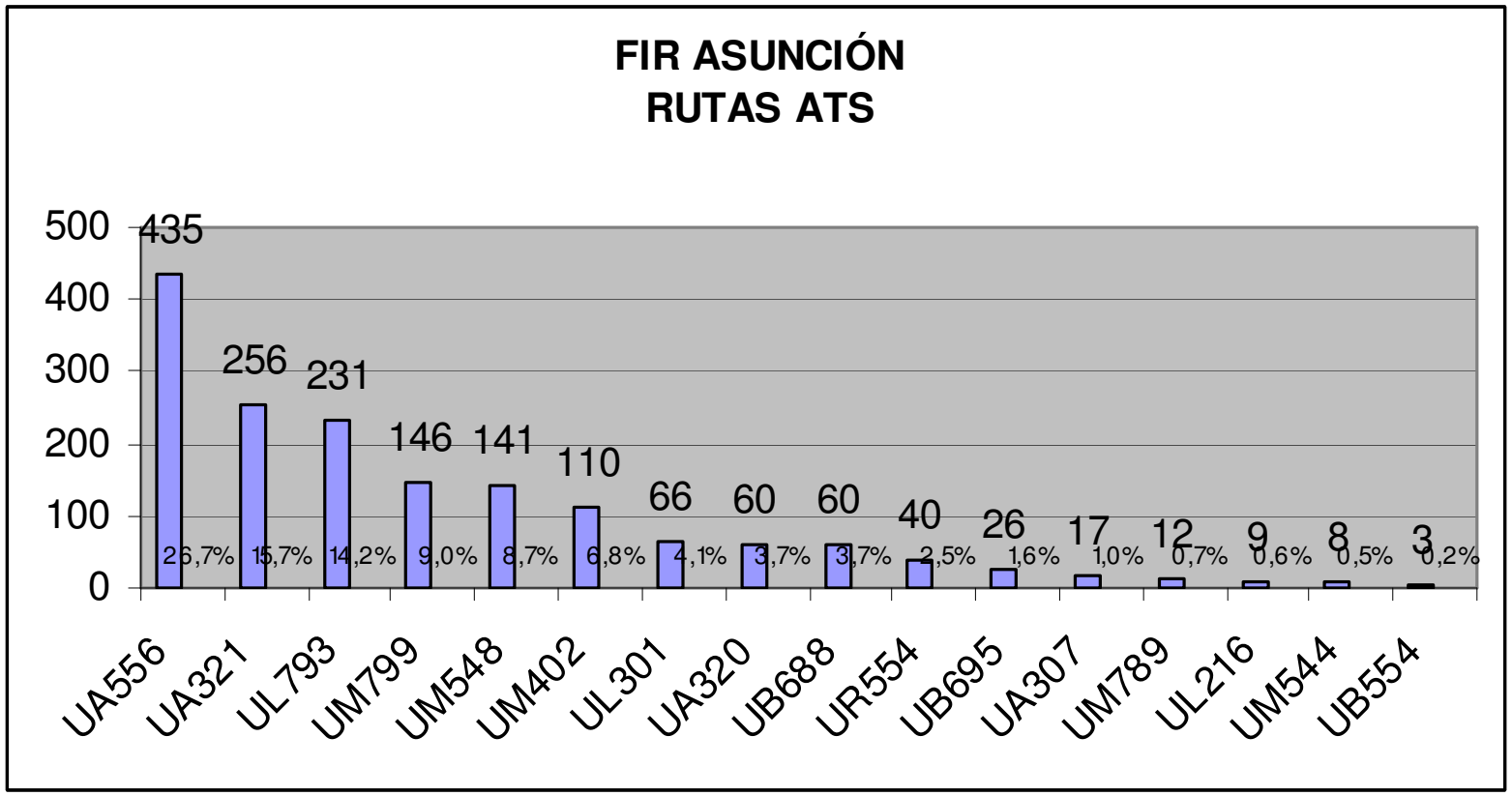
FIR Asunción



Análisis Red de Rutas – FIR ASUNCIÓN

Rutas FIR ASUNCIÓN – Cartas DOD	RNAV	"Convencionales"
Internacionales	8	8
Nacionales	------	-----

Carta DOD	AEROVIA	NUMERO MOVIMIENTOS	PORCENTAJE	PORCENTAJE ACUMULADO
	A311	6	0,369%	0,369%
UA307	**UA307**	17	1,045%	1,414%
UA320	**UA320**	60	3,688%	5,101%
UA321	**UA321**	256	15,734%	20,836%
UA556	**UA556**	435	26,736%	47,572%
UB554	**UB554**	3	0,184%	47,757%
UB688	**UB688**	60	3,688%	51,444%
UB695	**UB695**	26	1,598%	53,042%
UL216	**UL216**	9	0,553%	53,596%
UL301	**UL301**	66	4,057%	57,652%
UL793	**UL793**	231	14,198%	71,850%
UM402	**UM402**	110	6,761%	78,611%
UM544	**UM544**	8	0,492%	79,103%
UM548	**UM548**	141	8,666%	87,769%
	UM556	1	0,061%	87,830%
UM789	**UM789**	12	0,738%	88,568%
UM799	**UM799**	146	8,974%	97,541%
UR554	**UR554**	40	2,459%	100,000%


FIR ASUNCIÓN
RUTAS ATS
500
400
300
200
100
0
435
256
231
146
141
110
66
60
60
40
26
17
12
9
8
3
26,7%
15,7%
14,2%
9,0%
8,7%
6,8%
4,1%
3,7%
3,7%
2,5%
1,6%
1,0%
0,7%
0,6%
0,5%
0,2%
UA556
UA321
UL793
UM799
UM548
UM402
UL301
UA320
UB688
UR554
UB695
UA307
UM789
UL216
UM544
UB554

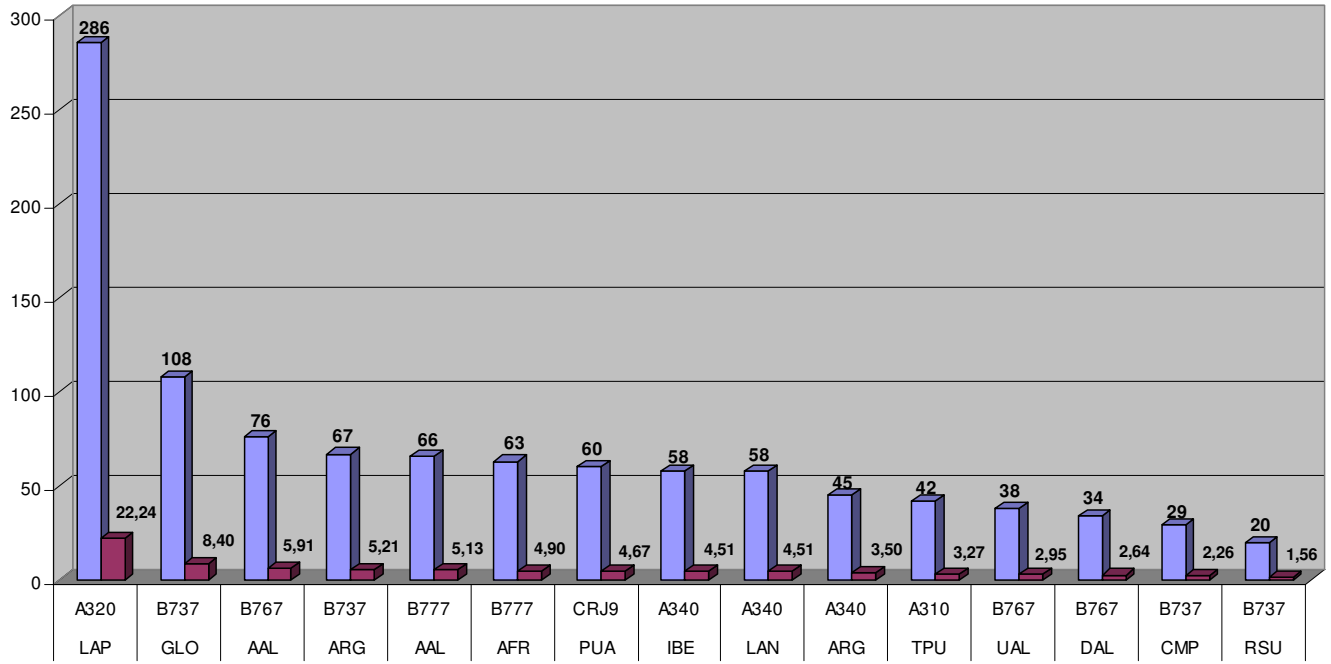
FIR Asunción

Pares de Ciudades servidos por Ruta ATS

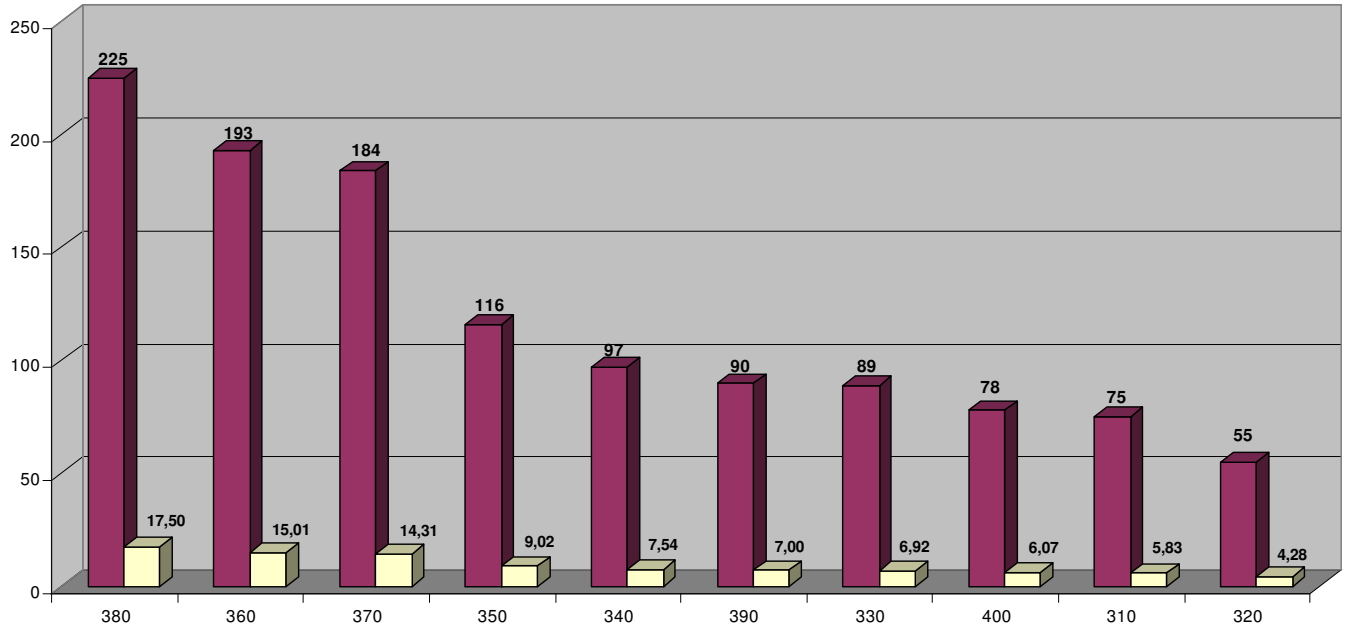
UA556	KJFK	SAEZ	26
	KJFK Total		26
	KMIA	SAEZ	7
		SUMU	1
	KMIA Total		8
	SABE	SBBU	1
		SGAS	4
		TTPP	1
	SABE Total		6
	SADF	SGAS	2
	SADF Total		2
	SAEZ	KIAD	2
		KJFK	23
		KMIA	1
		MDPC	4
		SGAS	117
		SVMI	16
	SAEZ Total		163
	SBEG	SUMU	2
	SBEG Total		2
	SGAS	SABE	3
		SAEZ	115
		SAWO	1
		SUMU	46
	SGAS Total		165

	SULS	KEWR	1
	SULS Total		1
	SUMU	SGAS	45
		SVPR	1
	SUMU Total		46
	SVMI	SAEZ	15
	SVMI Total		15
	TNCC	SABE	1
	TNCC Total		1
UA556 Total			435

FIR ASUNCIÓN
OPERADOR / TIPO



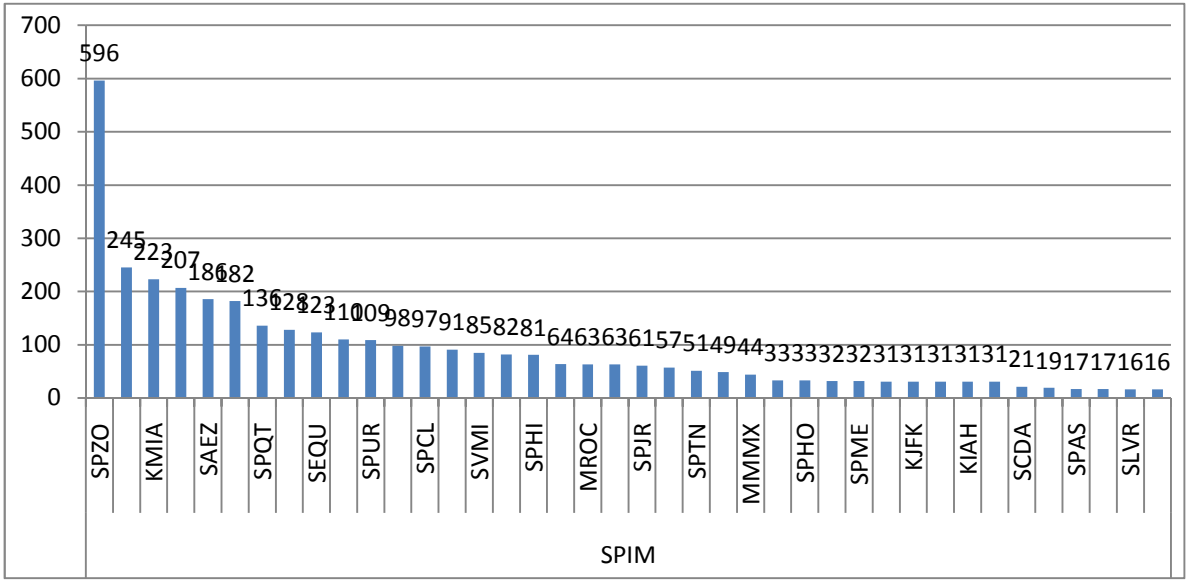
FIR ASUNCIÓN
NIVELES DE VUELO

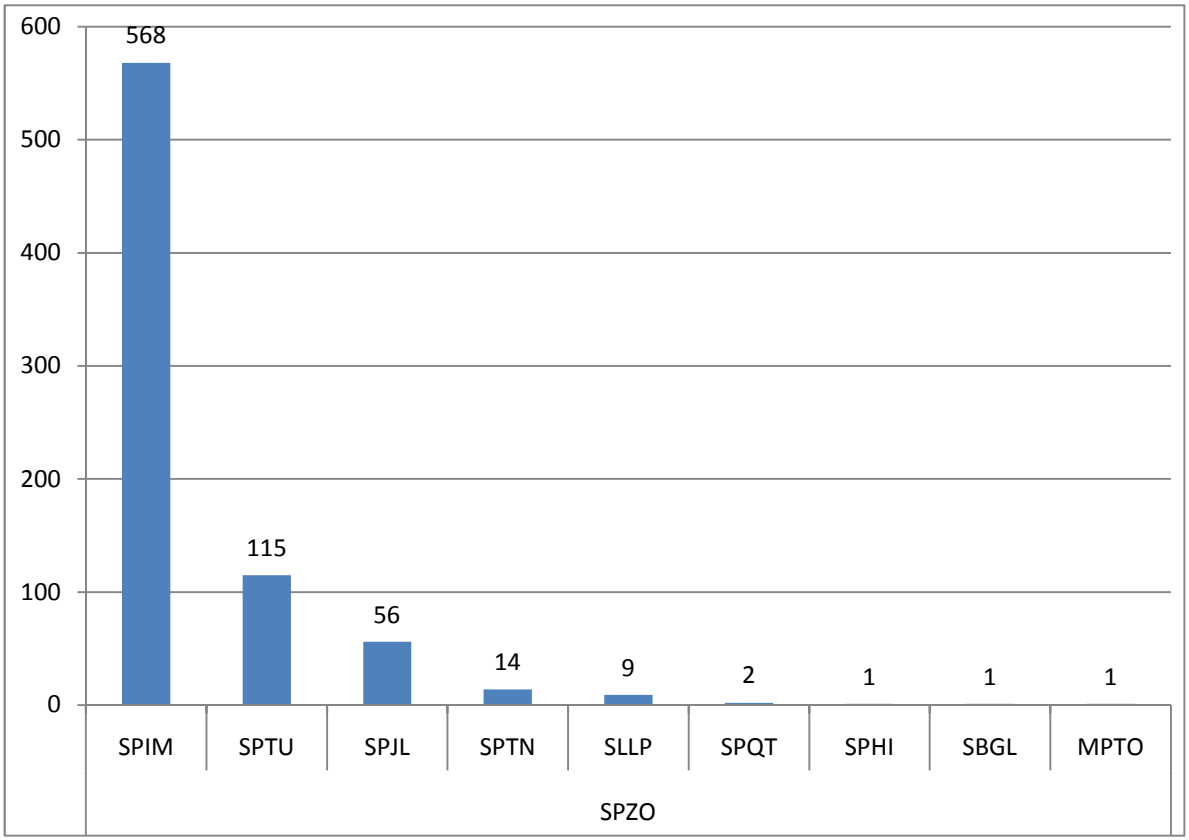


PERÚ

Apéndice U

IR LIMA – PARES DE CIUDADES




600
500
400
300
200
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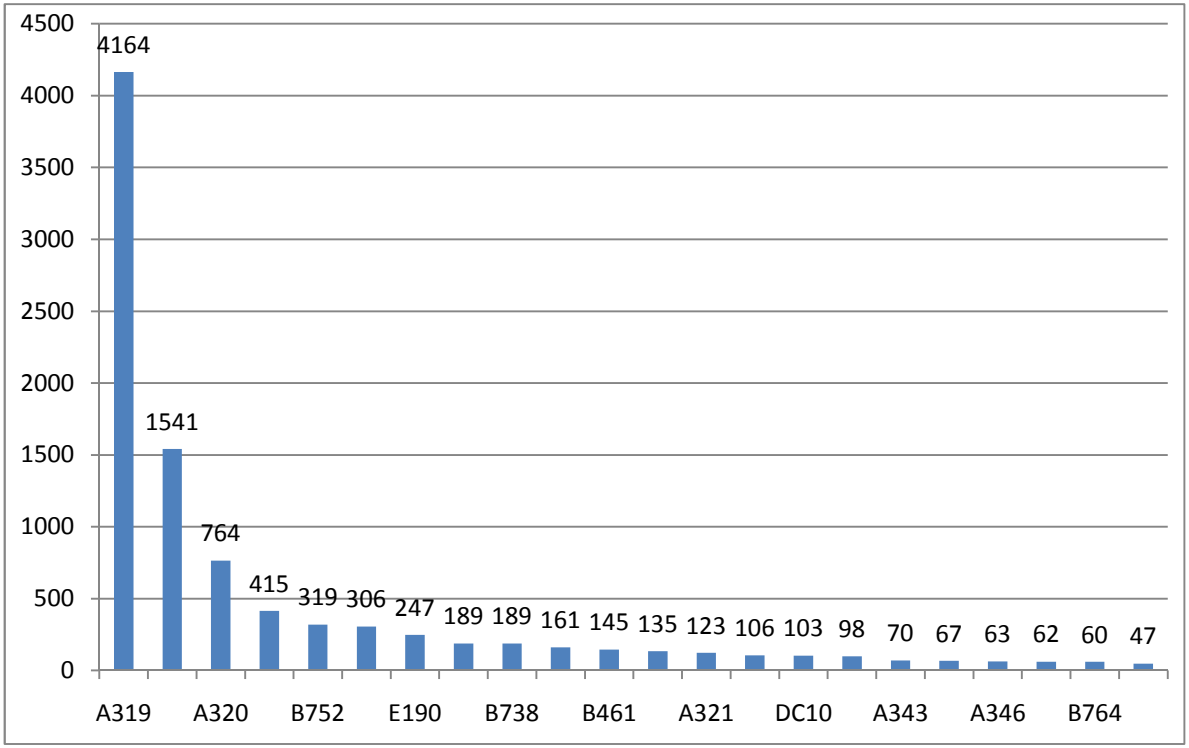
0
568
115
56
14
9
2
1
1
1
SPIM
SPTU
SPJL
SPTN
SLLP
SPQT
SPHI
SBGL
MPTO
SPZO

FIR LIMA – ANÁLISIS DE RUTAS ATS

RUTA	Total	%	ACUMULADO
UV10	835	8.55%	8.55%
UV1	684	7.00%	15.55%
UV11	644	6.59%	22.15%
UG437	580	5.94%	28.08%
UL780	488	5.00%	33.08%
UV12	466	4.77%	37.85%
UL302	447	4.58%	42.43%
UG431	415	4.25%	46.68%
UL550	398	4.07%	50.75%
UA321	389	3.98%	54.74%
UM414	381	3.90%	58.64%
UG436	341	3.49%	62.13%
UL780/UG436	326	3.34%	65.47%
UG426	325	3.33%	68.79%
UV9	268	2.74%	71.54%
UG436/UL780	267	2.73%	74.27%
UL305	226	2.31%	76.58%
UA301	198	2.03%	78.61%
UL306	174	1.78%	80.39%
UM415	131	1.34%	81.73%
UB677	126	1.29%	83.02%
UA320	97	0.99%	84.02%
UM415/UA320	88	0.90%	84.92%
UV14	85	0.87%	85.79%
UL308	73	0.75%	86.54%
UL401	72	0.74%	87.27%
UL344	66	0.68%	87.95%
UV5	60	0.61%	88.56%
UL550/UL308	57	0.58%	89.15%
UT212	52	0.53%	89.68%
UL308/UL550	**49**	**0.50%**	**90.18%**

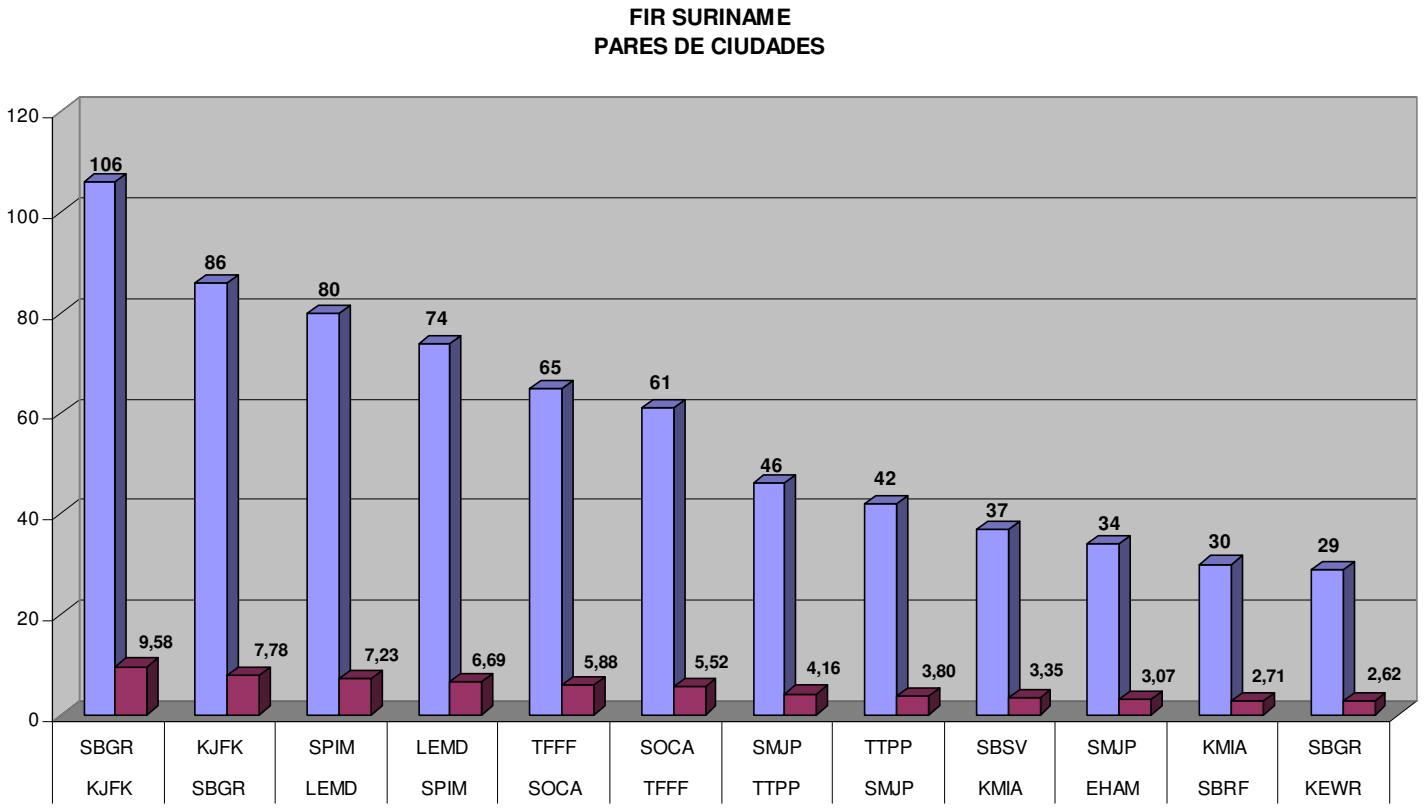
FIR LIMA - OPERADOR/TIPO DE AERONAVE



SURINAME

Apéndice V

FIR Paramaribo

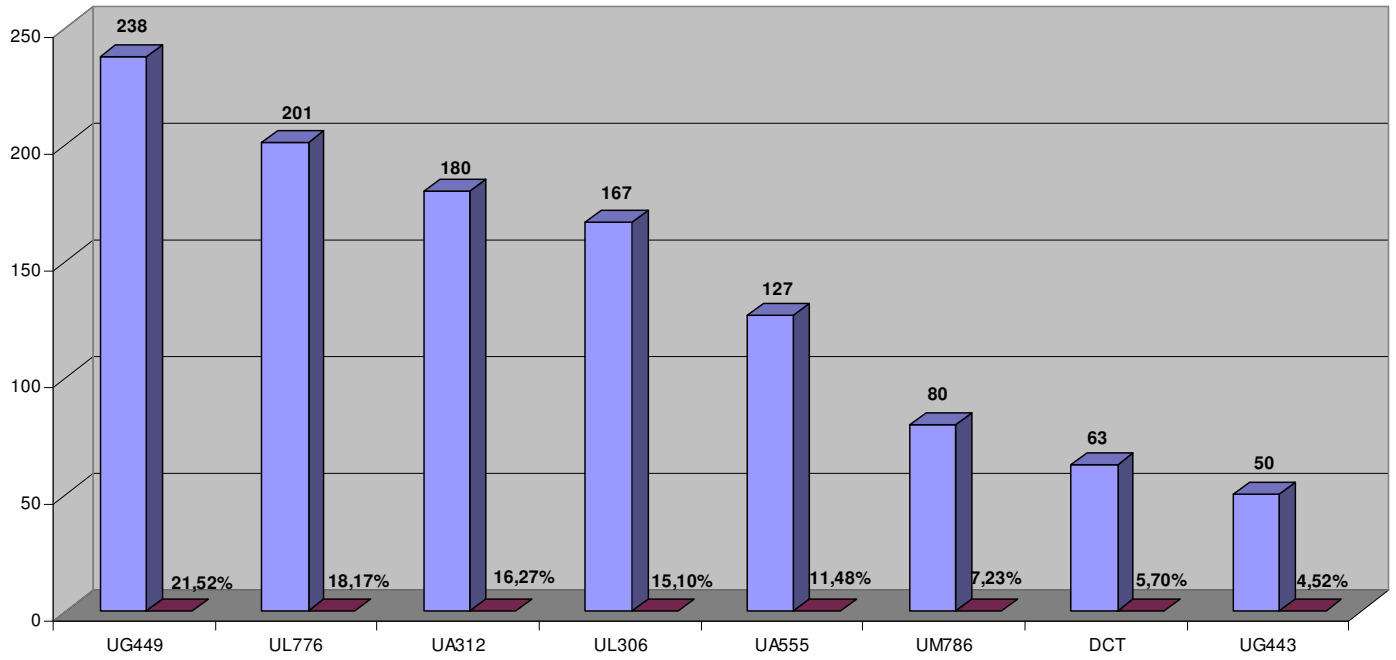


Análisis Red de Rutas – FIR PARAMARIBO

Rutas FIR PARAMARIBO – Cartas DOD	RNAV	"Convencionales"
Internacionales	8	8
Nacionales	------	-----

Chart DOD	AIRWAY	number of movements	percentage	cumulative percentage	OBS
	DCT	63	5,696%	5,696%	
UA312	UA312	180	16,275%	21,971%	
UA555	UA555	127	11,483%	33,454%	
UB680		0	0,000%	33,454%	
UG443	UG443	50	4,521%	37,975%	
UG449	UG449	238	21,519%	59,494%	
UL306	UL306	167	15,099%	74,593%	
UL776	UL776	201	18,174%	92,767%	
UM786	UM786	80	7,233%	100,000%	

FIR PARAMARIBO
RUTAS ATS



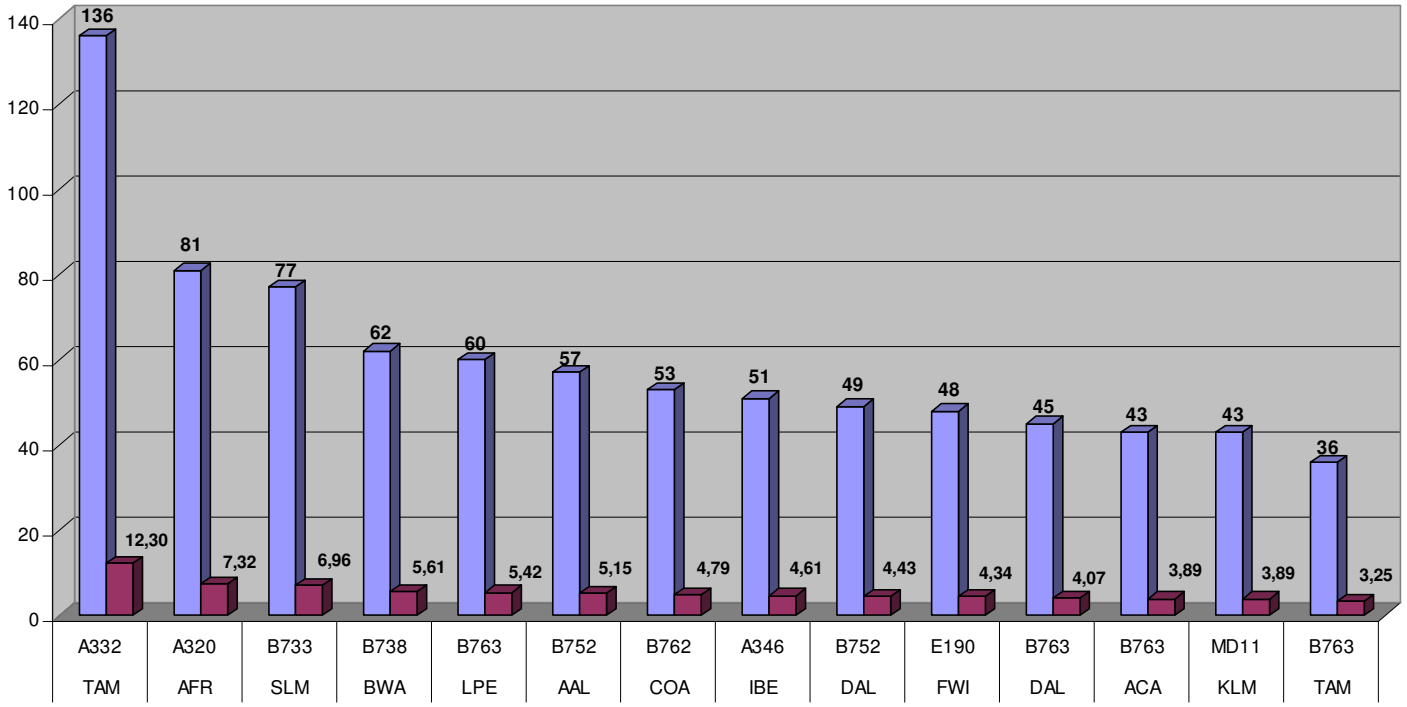
FIR Paramaribo

Pares de Ciudades servidos por Ruta ATS

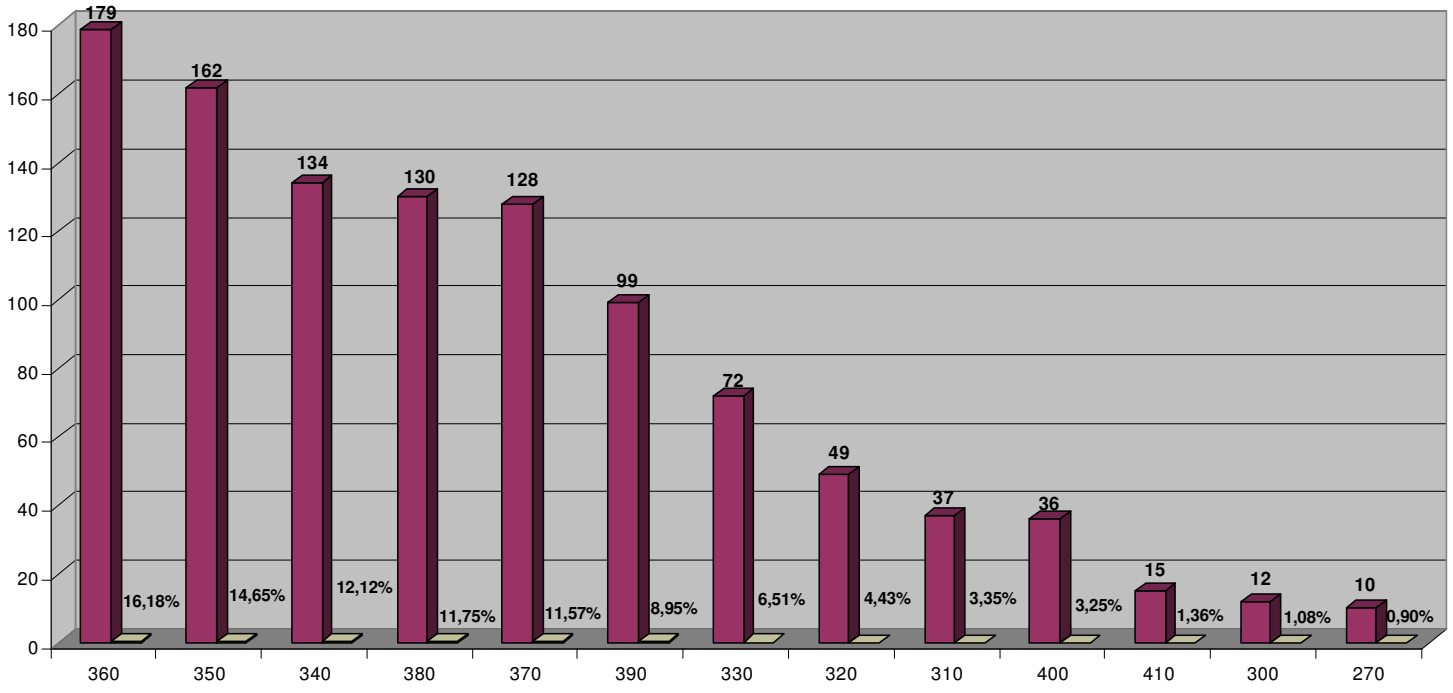
UG449	EHAM	SPIM	1
	EHAM Total		1
	KATL	SBFZ	11
		SBGL	1
		SBRF	2
	KATL Total		14
	KMIA	SBGL	1
		SBSV	35
		SMJP	3
	KMIA Total		39
	LEMD	SPIM	1
	LEMD Total		1
	SBBE	SMJP	14
		TTPP	2
	SBBE Total		16
	SBFZ	KATL	4
		KMIA	1
		TJBQ	1
	SBFZ Total		6
	SBRF	KMIA	29
	SBRF Total		29
	SBSV	KMIA	1
	SBSV Total		1
	SMJP	KMIA	11
		KPOB	1
		SBBE	12
		TISX	1

		TNCC	5
		TTPP	41
	SMJP Total		71
	SOCA	KFLL	1
		KIAD	1
	SOCA Total		2
	TGPY	SBMQ	1
	TGPY Total		1
	TJBQ	SBFB	1
	TJBQ Total		1
	TJIG	SMJP	1
	TJIG Total		1
	TJSJ	SBSV	1
	TJSJ Total		1
	TNCC	SMJP	9
	TNCC Total		9
	TTPP	SMJP	46
	TTPP Total		46
UG449 Total			239

FIR PARAMARIBO
OPERADOR / TIPO



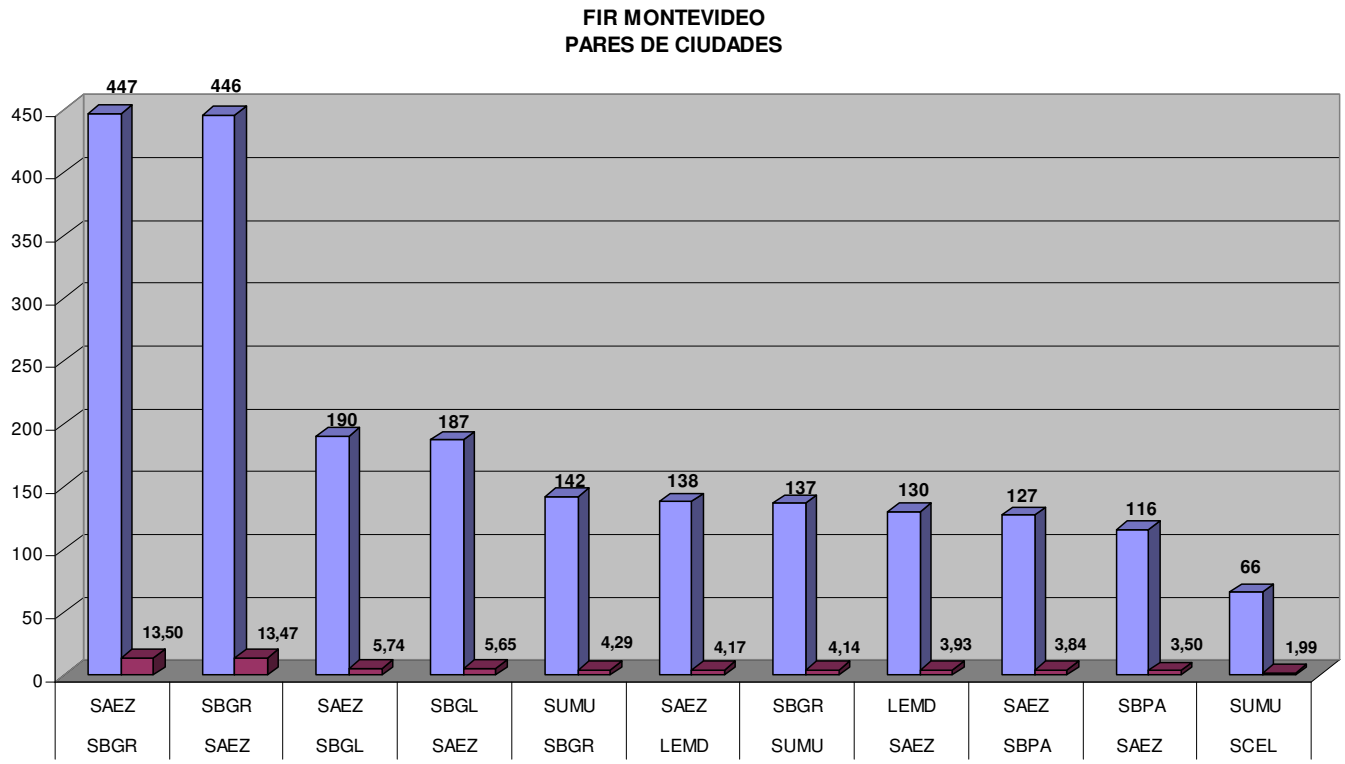
FIR PARAMARIBO
NIVELES DE VUELO



URUGUAY

Apéndice W

FIR Montevideo

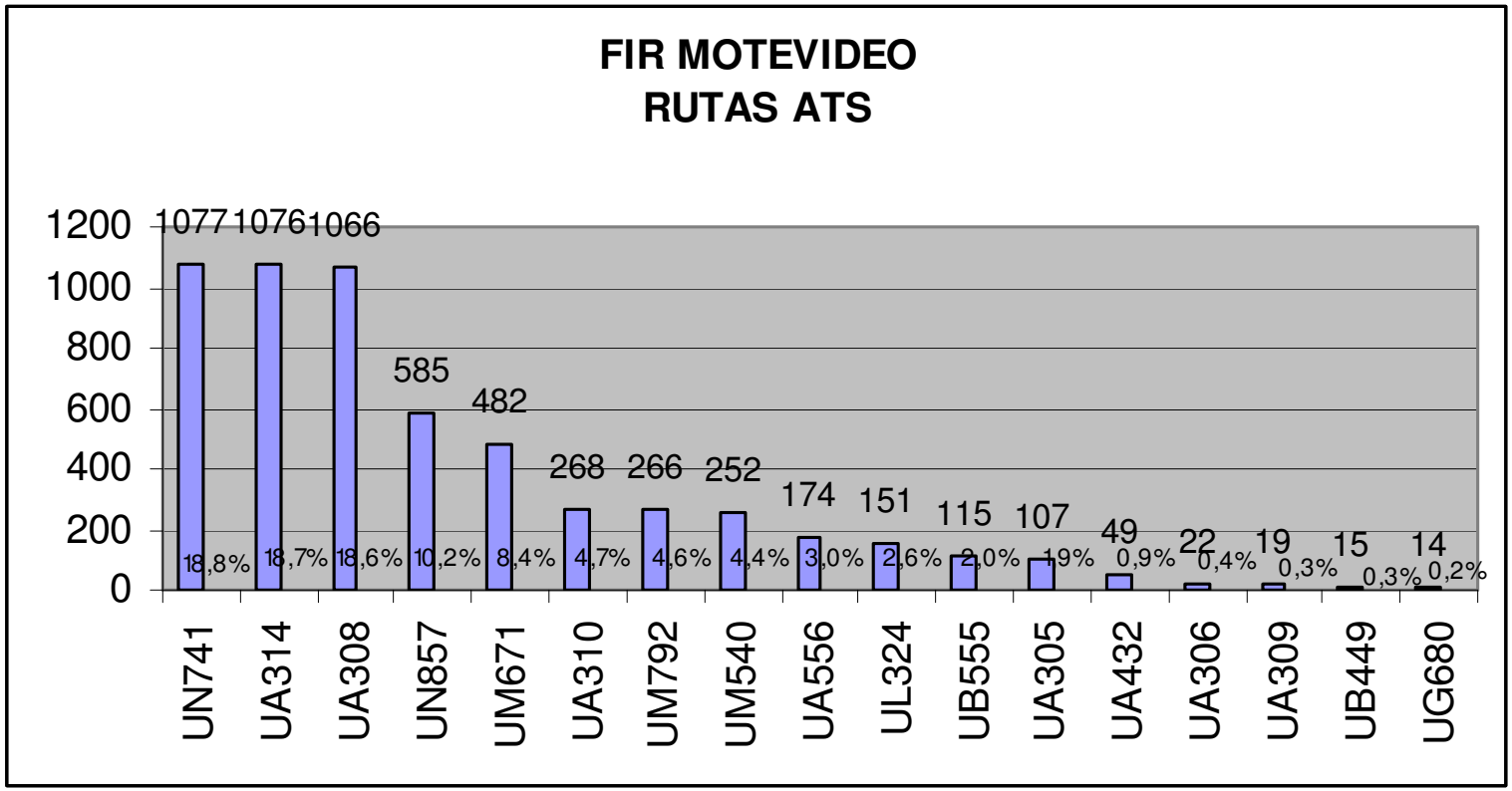


Análisis Red de Rutas – FIR MONTEVIDEO

Rutas FIR MONTEVIDEO – Cartas DOD	RNAV	"Convencionales"
Internacionales	7	11
Nacionales	------	-----

AIP	AEROVIA	NUMERO MOVIMIENTOS	PORCENTAJE	PORCENTAJE ACUMULADO	OBS
UA305	UA305	107	1,86%	1,863%	
UA306	UA306	22	0,38%	2,246%	
UA308	UA308	1066	18,56%	20,804%	
UA309	UA309	19	0,33%	21,135%	
UA310	UA310	268	4,67%	25,801%	
UA314	UA314	1076	18,73%	44,533%	
	UA324	1	0,02%	44,551%	No existe en AIP
UA432	UA432	49	0,85%	45,404%	
UA556	UA556	174	3,03%	48,433%	
UB449	UB449	15	0,26%	48,694%	
UB555	UB555	115	2,00%	50,696%	
UG680	UG680	14	0,24%	50,940%	

UL324	UL324	151	2,63%	53,569%
UM540	UM540	252	4,39%	57,956%
UM654	UM654	6	0,10%	58,061%
UM671	UM671	482	8,39%	66,452%
UM792	UM792	266	4,63%	71,083%
UN741	UN741	1077	18,75%	89,833%
UN857	UN857	585	10,18%	100,017%


FIR MOTEVIDEO
RUTAS ATS
1200
1000
800
600
400
200
0
1077
1076
1066
585
482
268
266
252
174
151
115
107
49
22
19
15
14
18,8%
18,7%
18,6%
10,2%
8,4%
4,7%
4,6%
4,4%
3,0%
2,6%
2,0%
1,9%
0,9%
0,4%
0,3%
0,3%
0,2%
UN741
UA314
UA308
UN857
UM671
UA310
UM792
UM540
UA556
UL324
UB555
UA305
UA432
UA306
UA309
UB449
UG680

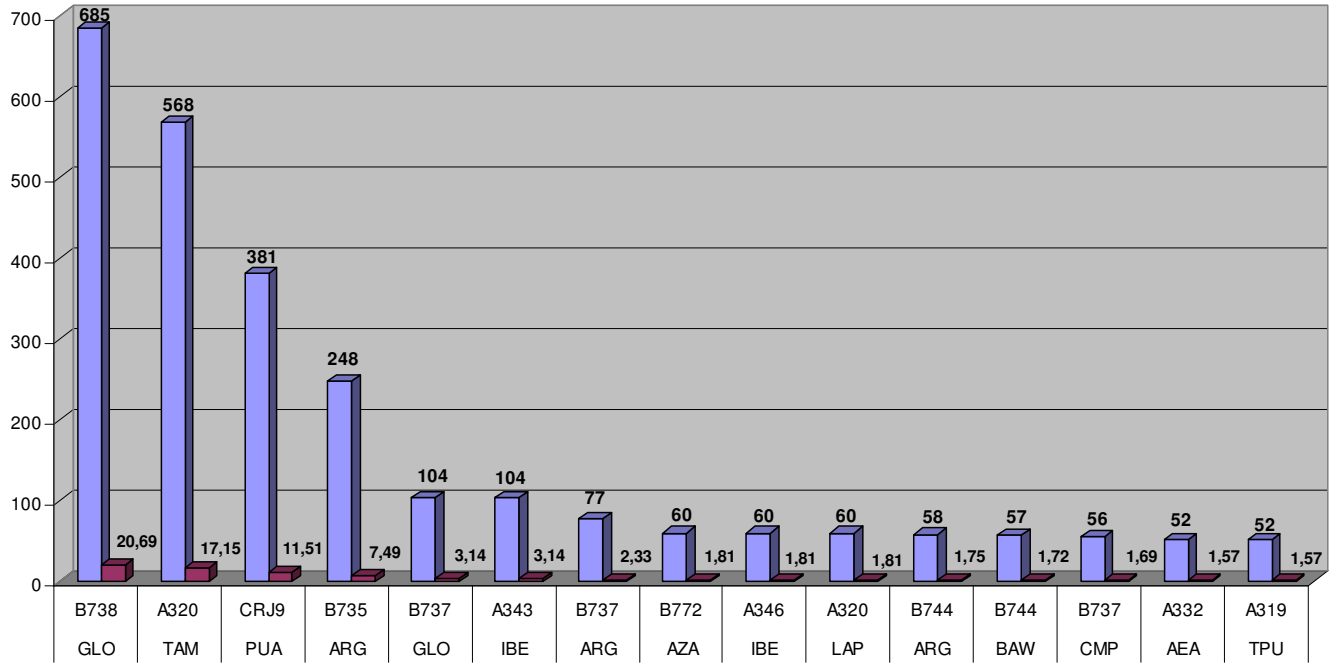
FIR Montevideo

Pares de Ciudades servidos por Ruta ATS

UA308	SAAR	SBPA	2
	SAAR Total		2
	SABE	GVAC	2
		LETO	1
		SBCF	1
		SBFL	1
		SBGL	1
		SBGR	5
		SBKP	1
		SBPK	1
	SABE Total		13
	SADF	SBCT	1
		SBFL	1
		SBGL	2
		SBGR	4
		SBNT	1
		SBSV	1
	SADF Total		10
	SAEZ	EDDF	13
		GOOY	9
		GVAC	1
		LEBL	5
		LEMD	127
		LEST	1
		LFPG	37
		LIRF	36

		LRBL	1
		SBCF	5
		SBGL	187
		SBGR	440
		SBKP	17
		SBPA	116
		SBPS	3
		SBSV	3
	SAEZ Total		1001
	SAZS	SBCF	4
		SBFL	5
		SBGL	3
		SBGR	25
		SBPA	3
	SAZS Total		40
UA308 Total			1066

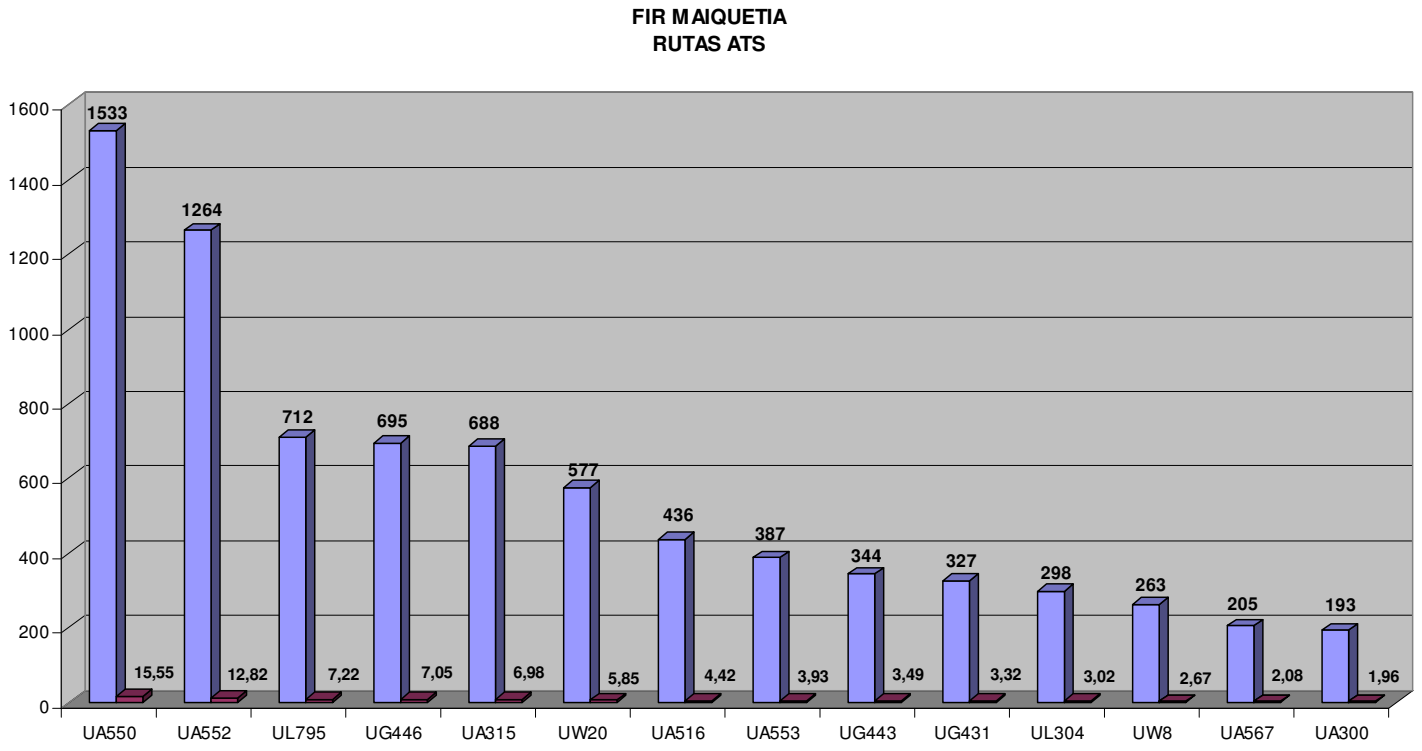
FIR MONTEVIDEO
OPERADOR / TIPO



VENEZUELA

Apéndice X

FIR Maiquetía



Análisis Red de Rutas – FIR MAIQUETIA

Rutas FIR MAIQUETÍA– Cartas DOD	RNAV	"Convencionales"
Internacionales	14	20
Nacionales	------	13

AIP	DATOS	Número Movimientos	Porcentaje	Porcentaje acumulado	OBS
	A574	1	0,010%	0,010%	No existe en AIP
	AU550	1	0,010%	0,020%	No existe en AIP
	IA552	1	0,010%	0,030%	No existe en AIP
	IW41	1	0,010%	0,041%	No existe en AIP
	U5551	1	0,010%	0,051%	No existe en AIP
UA300	UA300	193	1,958%	2,008%	
	UA304	1	0,010%	2,018%	No existe en AIP
UA315	UA315	688	6,978%	8,997%	
	UA316	1	0,010%	9,007%	No existe en AIP
	UA325	1	0,010%	9,017%	No existe en AIP
	UA334	1	0,010%	9,027%	No existe en AIP
	UA432	1	0,010%	9,037%	No existe en AIP
	UA441	1	0,010%	9,048%	No existe en AIP
UA511	UA511	43	0,436%	9,484%	
UA516	UA516	436	4,422%	13,906%	
	UA517	1	0,010%	13,916%	No existe en AIP
	UA531	1	0,010%	13,926%	No existe en AIP
UA550	UA550	1533	15,549%	29,476%	
UA551	UA551	152	1,542%	31,017%	
UA552	UA552	1264	12,821%	43,838%	

UA553	UA553	387	3,925%	47,763%	
UA554	UA554	163	1,653%	49,417%	
	UA556	1	0,010%	49,427%	No existe en AIP
UA561	UA561	121	1,227%	50,654%	
UA562	UA562	2	0,020%	50,675%	
UA563	UA563	86	0,872%	51,547%	
UA567	UA567	205	2,079%	53,626%	
UA574	UA574	60	0,609%	54,235%	
	UA787	2	0,020%	54,255%	No existe en AIP
UG427	UG427	97	0,984%	55,239%	
UG431	UG431	327	3,317%	58,556%	
UG432	UG432	104	1,055%	59,611%	
UG442	UG442	51	0,517%	60,128%	
UG443	UG443	344	3,489%	63,617%	
	UG444	1	0,010%	63,627%	No existe en AIP
	UG445	1	0,010%	63,637%	No existe en AIP
UG446	UG446	695	7,049%	70,687%	
	UG447	1	0,010%	70,697%	No existe en AIP
	UK795	1	0,010%	70,707%	No existe en AIP
UL216	UL216	6	0,061%	70,768%	
UL304	UL304	298	3,023%	73,790%	
	UL305	2	0,020%	73,811%	No existe en AIP
UL337	UL337	150	1,521%	75,332%	
	UL511	1	0,010%	75,342%	No existe en AIP
	UL567	1	0,010%	75,352%	No existe en AIP
UL793	UL793	51	0,517%	75,870%	
UL795	UL795	712	7,222%	83,092%	
UM409		0	0,000%	83,092%	
UM414	UM414	96	0,974%	84,065%	
UM417		0	0,000%	84,065%	
UM423		0	0,000%	84,065%	
UM656		0	0,000%	84,065%	
UM662		0	0,000%	84,065%	
UM778		0	0,000%	84,065%	
UM787	UM787	29	0,294%	84,359%	

UM796	UM796	24	0,243%	84,603%	
	UM797	1	0,010%	84,613%	No existe en AIP
UR640	UR640	50	0,507%	85,120%	
UW1	UW1	52	0,527%	85,648%	
UW14	UW14	60	0,609%	86,256%	
	UW17	6	0,061%	86,317%	No existe en AIP
UW19	UW19	172	1,745%	88,062%	
UW20	UW20	577	5,853%	93,914%	
	UW21	1	0,010%	93,924%	No existe en AIP
	UW219	1	0,010%	93,934%	No existe en AIP
	UW22	1	0,010%	93,945%	No existe en AIP
	UW23	1	0,010%	93,955%	No existe en AIP
	UW24	1	0,010%	93,965%	No existe en AIP
	UW25	1	0,010%	93,975%	No existe en AIP
	UW26	1	0,010%	93,985%	No existe en AIP
UW27	UW27	75	0,761%	94,746%	
	UW3	1	0,010%	94,756%	No existe en AIP
UW34	UW34	2	0,020%	94,776%	
UW40	UW40	132	1,339%	96,115%	
	UW41	86	0,872%	96,988%	No existe en AIP
	UW414	1	0,010%	96,998%	No existe en AIP
UW4		0	0,000%	96,998%	
UW42		0	0,000%	96,998%	
UW5	UW5	21	0,213%	97,211%	
UW7		0	0,000%	97,211%	
UW8	UW8	263	2,668%	99,878%	
	UW9	10	0,101%	99,980%	No existe en AIP
W20	W20	1	0,010%	99,990%	Espacio Aéreo Inferior
	YA563	1	0,010%	100,000%	No existe en AIP

FIR Maiquetía

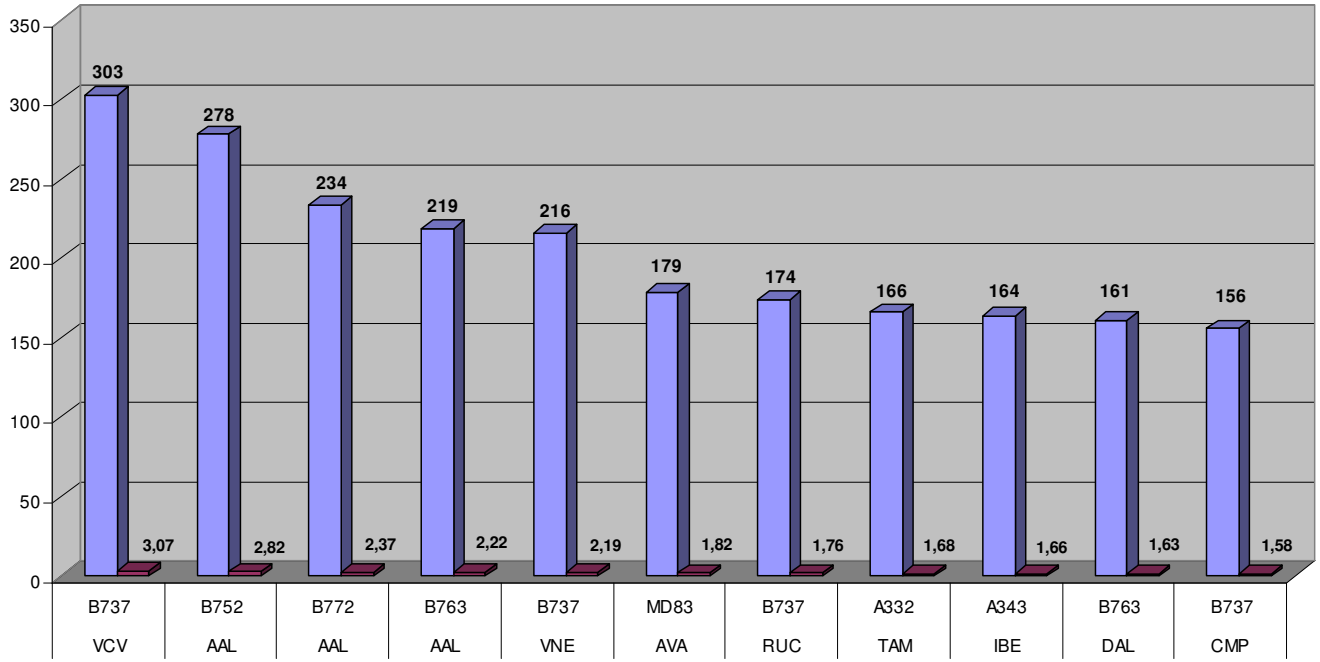
Pares de Ciudades servidos por Ruta ATS

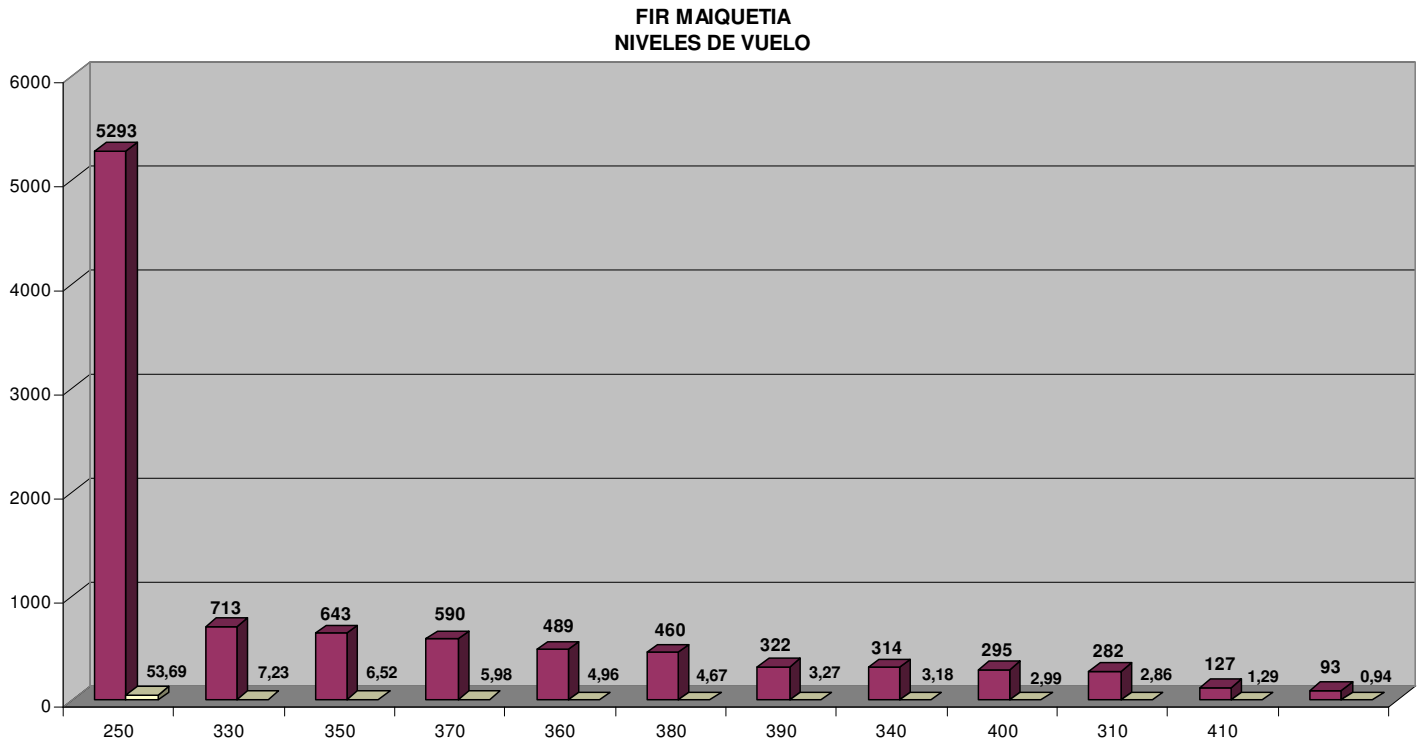
UL795	KATL	SBGR	1
	KATL Total		1
	KDFW	KMIA	1
		SBGR	5
	KDFW Total		6
	KFLL	SARE	1
		SBGR	1
	KFLL Total		2
	KIAD	SAEZ	2
	KIAD Total		2
	KIVK	SBGR	1
	KIVK Total		1
	KMCO	SBGR	31
	KMCO Total		31
	KMEM	SBKP	16
	KMEM Total		16
	KMEN	SBKF	1
		SBKP	6
	KMEN Total		7
	KMIA	SBCB	3
		SBCF	19
		SBCT	10
		SBCW	1
		SBEG	87
		SBGL	74
		SBGR	128
		SBKP	72
		SBPA	1

	SBSV	1
	SBVT	2
KMIA Total		398
KORD	SBGR	18
KORD Total		18
KVNY	SBBR	1
KVNY Total		1
SABE	TNCC	1
SABE Total		1
SAEZ	KIAD	4
SAEZ Total		4
SBCF	KMIA	2
SBCF Total		2
SBEG	KHQU	1
	KMIA	33
	TNCA	1
SBEG Total		35
SBGL	KMIA	36
SBGL Total		36
SBGR	KDFW	8
	KMCO	28
	KMIA	87
	KORD	2
	TNCC	1
SBGR Total		126
SBKF	KMEN	1
SBKF Total		1
SBKP	KMEM	10
	KMEN	5

		KMIA	5
		SVVA	1
	SBKP Total		21
	SBPA	KRFD	1
	SBPA Total		1
	SLVR	SVBL	1
	SLVR Total		1
	SUMU	KMIA	1
	SUMU Total		1
UL795 Total			712

FIR MAIQUETIA
OPERADOR / TIPO




FIR MAIQUETIA
NIVELES DE VUELO
6000
5000
4000
3000
2000
1000
0
5293
53,69
713
7,23
643
6,52
590
5,98
489
4,96
460
4,67
322
3,27
314
3,18
295
2,99
282
2,86
127
1,29
93
0,94
250
330
350
370
360
380
390
340
400
310
410

Apéndice Y

RUTAS INTERNACIONALES DE BAJO MOVIMIENTO DE TRÁNSITO AÉREO (MENOR QUE 30 VUELOS AL MES)

Ruta ATS	FIR Amazónica	FIR Asunción	FIR Brasilia	FIR Curitiba	FIR Ezeiza	FIR Georgetown	FIR Maiquetía	FIR Montevideo	FIR Paramaribo	FIR Recife	FIR Resistencia
1. UA316	20	X	X	X	X	X	X	X	X	X	X
2. UA562	X	X	X	X	X	X	2	X	X	X	X
3. UA566	21	X	X	X	X	X	X	X	X	X	X
4. UA632	X	X	X	X	X	6	X	X	X	X	X
5. UB449	X	X	X	X	X	X	X	15	X	X	X
6. UB556	X	X	X	X	4	X	X	X	X	X	X
7. UB652	X	X	3	X	X	X	X	X	X	X	X
8. UB680	X	X	X	X	X	X	X	X	0	X	X
9. UB687	X	X	X	X	X	X	X	X	X	X	20
10. UB681	2	X	X	X	X	1	X	X	X	X	X
11. UG680	X	X	X	14	0	X	X	X	X	X	X
12. UL211	X	X	X	X	0	X	X	X	X	X	X
13. UL216	3	9	X	2	X	X	6	X	X	X	X

14. UL309	11	X	X	X	X	X	X	X	X	X	
15. UL322	11	X	X	X	X	0	X	X	X	X	X
16. UL330	X	X	0	X	X	X	X	X	X	X	X
17. UL335	X	X	16	X	X	X	X	X	X	X	X
18. UM417	6	X	12	X	X	X	0	X	X	X	X
19. UM527	0	X	X	X	X	0	X	X	X	X	X
20. UM529	X	X	X	X	X	X	X	X	X	X	24
21. UM544	X	8	X	0	X	X	X	X	X	X	X
22. UM656	4	X	3	9	X	X	0	X	X	X	X
23. UM662	X	X	X	X	X	X	0	X	X	X	X
24. UM778	X	X	X	X	X	X	0	X	X	X	X
25. UM787	X	X	X	X	X	X	29	X	X	X	X
26. UM789	X	12	X	X	X	X	X	X	X	X	18
27. UM796	X	X	X	X	X	X	24	X	X	X	X
28. UR550	25	X	X	X	X	X	X	X	X	X	X
29. UR558	1										
30. UR559	5										
31. UR563	X	X	X	5	X	X	X	X	X	X	8
32. UR683	X	X	X		0	X	X	X	X	X	X